

persons are employed by television service companies. Such employees are for the most part highly skilled technicians who required extensive training to fit them for their jobs. Such training represents a considerable investment of time, effort and expense on the part of employees and employers alike.

9. The television service companies which are members of intervenor have a considerable investment in their existing businesses. Such investment on the part of television service companies similarly engaged throughout the United States is many times greater. Expenditures throughout the United States by the television receiving set-owning public for installation and service have reached an annual rate of many millions of dollars.

10. During the past few years, the television industry has expanded rapidly based upon the transmission and reception of black and white television programs pursuant to commercial standards therefor heretofore established by the Commission. The service phase of the television industry has grown apace with the manufacturing, distributing, and broadcasting phases of the industry in meeting the needs of the public owning black and white television receiving sets, the number of which is now more than 8,000,000.

11. The purchaser of a television receiving set customarily enters into a written contract at the time of such purchase sometimes called an Owner's Service Policy, with a television service company obligating the latter, for a fixed sum, to perform the installation (including installation of necessary antenna, transmission line and other accessories, and installation, testing, and adjustment of the television receiver, and orientation for best possible reception) and also to perform service for a specified period, usually one year (including the maintenance of [fol. 788] the television receiver in proper working order and furnishing of any necessary replacement parts or tubes). The service rendered for the specified period requires a variable and indeterminate number of service calls depending upon the particular set and the requirements of the particular customer. In many cases, such written contracts or service policies, providing for a fixed charge and a variable amount of service, are renewed upon their expiration. In other instances, installation and/or

service are performed on the basis of a variable charge made according to the amount and nature of the work and the parts furnished. A substantial number of the television receiving sets in the hands of the public are presently being serviced pursuant to written contracts and service policies with television service companies.

12. Intervener's member firms have outstanding and unexpired written contracts and service policies obligating them to perform installation, maintenance and service and to furnish replacement parts on thousands of black and white television receiving sets in the Chicago area.

Existing Black and White Standards

13. The Commission established in 1941 the present commercial standards for the transmission and reception of black and white television. This single set of high-quality long-range technical standards, established after extensive hearings, has been the basis for the enormous popularity and phenomenal growth of the black and white television system.

14. The black and white television transmission standards provide for the broadcasting of a picture having 525 lines and 60 fields per second and approximately 200,000 picture elements, thereby affording a high degree of picture detail.

The Order Complained Of

15. On October 10, 1950, the Commission issued its Order, effective November 20, 1950, adopting for the commercial broadcasting of color television the color television system [fol. 789] of Columbia Broadcasting System, Inc., (hereinafter referred to as "CBS"). This is the Order complained of. A copy of this Order is annexed to the complaint of the original plaintiffs as Exhibit "II" thereto, and by this reference is expressly made a part hereof as though fully set forth herein.

CBS System Is Incompatible

16. The CBS color television system so adopted by the commission is an incompatible system. A "compatible" system is one whereunder the color television transmissions of that system can be received as a black and white picture on an existing black and white television receiving set with-

out making any changes in the set. Under the CBS system, no picture at all, either in color or black and white, can be received from broadcasts of the CBS color system by any of the more than 8,000,000 black and white television receivers presently in the hands of the public. To the extent that color programs are broadcast pursuant to the CBS standards, existing television receiving set owners will be deprived of a part of the television broadcast service, in reliance on which they purchased their sets, to their irreparable injury and detriment.

17. Evidence concerning two other color television systems was presented to the Commission prior to its acceptance of the CBS system. The system proposed by Radio Corporation of America (an original plaintiff, herein sometimes referred to as "RCA") is compatible. The other system, proposed by Color Television Incorporated, is theoretically compatible. Both of these compatible systems were rejected by the Commission in favor of the incompatible CBS system.

CBS Picture Is Degraded

18. In addition to its incompatibility, the CBS system adopted by the Commission, is a degraded system. Instead of a picture having 525 lines and 60 fields per second and 200,000 picture elements, as is the case of the present black and white picture, the CBS system produces a picture having only 405 lines and 144 fields per second and 83,000 picture elements. This difference means much less picture detail and therefore a much inferior picture under the CBS system. The proposed RCA system is not subject to this objection of a degraded picture.

CBS System Is Mechanical, Not All-Electronic

19. The CBS color system is not an all-electronic system, as is the case of the proposed RCA and Color Television Incorporated systems, but is a mechanical system. The CBS system requires a rotating color wheel or disc to be placed at the front of the television receiving set. This mechanical wheel or disc must be of a diameter at least twice that of the picture tube in the set. The outer edges of the spinning disc rotate at a high rate of speed. This color wheel would have to be removed each time a black and white program was desired. The result is an awkward,

unattractive and space-consuming gadget which would ruin or seriously detract from the appearance of the television set itself and of the home in which the set is located. Manufacturers of television receiving sets have invested large sums in the designing of attractive cabinets which would fit into the furniture styles and arrangements of American homes. Most set owners have purchased their particular sets having in mind the appearance of the sets and cabinets as articles of furniture in their homes. This "furniture incompatibility" of the CBS mechanical disc is particularly a factor of no little significance among American women who have devoted their time, effort and expense to making their homes and furniture attractive.

CBS Picture Is Limited in Size

20. The CBS system is also objectionable because of its limitation in picture size. The maximum picture which it produces is a 12½ inch picture, whereas approximately 90% of the television receiving sets being presently sold have a picture size of 16 inches or larger. Thus, owners of sets with picture tubes larger than 12½ inches would suffer a [fol. 791] loss of picture size (after the conversion of their sets hereinafter discussed) in the reception of the CBS system color transmissions.

CBS System Requires Expensive Adapting and Converting

21. In order to receive CBS system color transmissions in black and white, owners of existing black and white television receiving sets must incur the additional expense of having their sets "adapted." Such adaptation will require an outlay from each set owner of from \$80.00 to \$100.00 for an adapter plus \$10.00 to \$15.00 more for its installation.

22. In order to receive the CBS system programs in color, it will further be necessary to add to existing sets a "converter" (consisting primarily of the spinning mechanical disc and its housing) at an estimated conversion cost of \$200.00.

CBS Picture Quality Is Poor

23. As hereinabove set forth, even after adaptation, or after adaptation and conversion, the resulting black and white or color picture received under the CBS system is a degraded picture inferior in quality to the present stand-

ard black and white picture, lacking in detail and definition and limited in size. In addition, the CBS system picture is subject to flicker and color distortion and is of limited brightness and brilliance because of the color filter used.

. Doubtful Adaptability and Convertibility

24. The adaptability and convertibility of existing television receiving sets is highly questionable. Similar conversions in the past, of so-called FM radio sets to the new band, which the Commission had stated could be done, met with almost universal failure. If the existing 8,000,000 television receiving sets can not successfully be adapted or converted, they will become obsolete insofar as color programs are concerned, thereby resulting in huge loss of investment and confidence on the part of the public.

Electrical Hazards

25. Major circuit changes required by such adaptation and conversion of a television set would void the approval [fol. 792] of Underwriters Radio Laboratory, and jeopardize the set owner's insurance coverage for fire or other hazards.

26. The greatly increased electrical load from the use of the color converting unit under the CBS system would overload already inadequate electrical wiring of many houses, causing fuse-blowing, fires and other hazards.

Bracket Standards

27. In the course of its adoption of the CBS color standards, the Commission has sought to impose on television manufacturers the adoption of so-called bracket standards in the manufacture of future black and white sets. These bracket standards would permit the broadcasting and reception of black and white television of either 525 lines, 60 fields per second (present black and white standards) or 405 lines, 144 fields per second (CBS standards). The required adoption of such bracket standards in the manufacture of future black and white receivers would entail substantial and wasteful increases in cost to the public for television receivers and for service, as well as far greater service problems to the service companies. Such large cost increases would only provide for variations in the standards of black and white transmissions, and would not

provide color pictures. The purpose of such bracket standards would be to provide a degraded compatibility for the CBS system on future television receivers.

Black and White Sales Will be Stopped

28. The premature and ill-advised adoption of the CBS system, and the public confusion and uncertainty thereby engendered, have and will continue to drastically curtail the sales of large existing stocks of black and white television receiving sets, all to the great detriment and irreparable injury of television manufacturers, broadcasters, distributors, dealers, and service companies. This sudden disruption of the rapidly growing television industry seriously threatens the huge investment therein of all concerned. The loss of new installations and servicing already jeopardizes the business future of many service companies and their employees.

[fol. 793] Parts and Tube Shortages Aggravated

29. Adoption of the CBS color system at the present time will aggravate parts and tube shortages which are already acute. Color television at this stage will add many components and a number of new types of tubes to existing demands. Present requirements for parts and tubes can not be filled adequately. The new requirements will mean new confusion.

Shortage of Trained Service Personnel

30. The existing insufficiency of qualified service personnel makes it virtually impossible for service companies to undertake the adaptation and conversion of several million existing sets in the hands of the public. The present national defense effort is draining the supply of technically trained personnel available to the television service industry, which already has an extremely grave man power shortage.

No Public Demand for Color

31. The alleged demand for color on the part of the public in television can not be substantiated. The motion picture industry has had color for 20 years, and yet today only a small percentage of its production is in color. A well-established

lished industry such as the motion picture industry can not carry the heavy cost burden of color. The infant television industry should not be saddled with this excessive cost burden at a time when it might bring economic catastrophe.

CBS Color System Is Premature

32. Color systems at their present stage of development are not yet ready for the television industry, nor is the television industry at its present stage of economic growth yet ready for color systems. Other industries, such as the automobile industry, have been permitted to grow in an orderly fashion. The Commission is attempting to use its control over the television industry to force changes which are premature and economically unsound.

[fol. 794] Service Problems for CBS Color Will Ruin Good-Will

33. The television service industry will be faced with demands by set owners, unfamiliar with the limitations of the CBS color system, for reception of new color transmissions in black and white and in color equivalent in quality to present reception of black and white transmissions. The anticipated inability to satisfy such unwarranted demands will create havoc with existing customer relations, cause complications under existing written contracts and owner's service policies, and destroy the good-will heretofore built up by service companies. The unacceptable picture quality under the CBS color system, as well as the other difficulties herein set forth attendant upon the adoption of this system, will be transmuted by a confused public to ill-feeling toward and dissatisfaction with the service companies.

Opposition to Order

34. The Order complained of is opposed by most of the television manufacturers, engineers, broadcasters (except CBS), distributors, dealers, service companies, and the public. The Order is based on scientifically incorrect conclusions. Two members of the Commission were opposed to the Order, as against five for it. The Order failed to properly consider and was contrary to the evidence submitted. The Commission's staff engineer had an improper interest in the adoption of the CBS system. The Commis-

sion's notice of July 11, 1949, pursuant to which the hearings were held, proposed consideration of color systems by which pictures could be received on existing receivers "simply by making relatively minor modifications in such existing receivers."

Order Is Illegal and Improper

35. The Commission's Order is illegal, void and beyond the power, authority and jurisdiction of the Commission for the following reasons:

(a) The Order is contrary to the public interest, convenience and necessity, the basic statutory standard contained in the Communications Act of 1934.

[fol. 795] (b) The Order violates Section 303(g) of the Communications Act of 1934.

(c) The Order is unsupported by substantial evidence, is arbitrary and capricious, and is an abuse of discretion.

(d) The Order was adopted before the Commission had discharged its statutory duty to inform itself adequately before issuing a final order in a rule-making proceeding. The Commission wrongfully refused to consider additional evidence of determinative significance to its decision.

(e) The Order is predicated upon the rejection by the television industry of the arbitrary and illegal attempt by the Commission to impose the so-called bracket standards as a condition to the allowance of more time for the development of all color television systems.

(f) The Order is contrary to the terms of the Commission's Notice of July 11, 1949, pursuant to which the hearings on which the Order purports to be based were held.

(g) On the facts disclosed, the Commission's staff engineer should not have been permitted to continue in the proceeding.

(h) The Order deprives intervenor's members of property without due process of law, contrary to the Fifth Amendment to the Constitution of the United States.

Irreparable Injury—No Adequate Remedy

36. Unless this Court restrains, enjoins, and suspends the promulgation, operation and execution of the Order complained of, both temporarily and permanently, as prayed for herein, intervenor and its members and television service companies generally and the television industry as a whole and the public will suffer and will continue to suffer the irreparable injury hereinabove alleged and described, for which they have no adequate remedy at law.

[fol. 796] Wherefore, intervenor prays:

A. That this Court, as soon as practicable, convene a specially constituted court of three judges, as required by Title 28, United States Code (28 U. S. C. Sections 2284, 2325) and that a temporary or interlocutory injunction be entered herein restraining, enjoining and suspending until the further order of this Court the promulgation, operation, and execution of the Order.

B. That, after final hearing, this Court adjudge, order and decree that the Order is, and has at all times been, beyond the lawful authority of the Commission, in violation of the legal rights of plaintiffs and intervenor, and is wholly void, arbitrary and unreasonable, and that the Order be permanently and perpetually vacated, set aside, suspended and annulled, and the promulgation, operation and execution thereof permanently and perpetually restrained and enjoined.

C. That plaintiffs and intervenor may have such other and further relief in the premises as to equity and justice may appertain and as may be deemed by this Court to be adequate and proper under the circumstances.

Schradzke and Gould. By Gerald Ratner. Attorneys for Television Installation Service Association, intervenor, 33 N. LaSalle Street, Chicago 2, Illinois.

[fol. 797] *Duly sworn to by Frank J. Moch. Jurat omitted in printing.*

[fol. 797a] [File endorsement omitted]

[fol. 798] And afterwards, on, to wit, the 20th day of November, 1950, there was filed in the Clerk's office of said

Court two (2) certain Subpoena Duces Tecum, With Marshal's Return Endorsed Thereon, in words and figures following, to wit:

[fol. 799] DISTRICT COURT OF THE UNITED STATES OF AMERICA
NORTHERN DISTRICT OF ILLINOIS

Subpoena Duces Tecum. Case No. 50 C 1459

The President of the United States of America

To Federal Communications Commission:

—Greeting:

We command you, that all business and excuses being laid aside, you and each of you attend before the Honorable J. Earl Major, Philip L. Sullivan and Walter J. LaBuy, *en banc*, Judges of the District Court of the United States for said District, on the 14th day of November, A. D. 1950, at 10:30 o'clock in the forenoon in Room 605, United States Court House in Chicago, in said District, to testify and give evidence in a certain cause now pending and undetermined in said Court, wherein Radio Corporation of America, National Broadcasting Company, Inc. and RCA Victor Distributing Corporation, are Plaintiffs and United States of America, Federal Communications Commission and Columbia Broadcasting System, Inc., are Defendants, on the part of Pilot Radio Corporation, Applicant for intervention, as Plaintiff, and that you also diligently and carefully search for, examine, and inquire after and bring with you, and produce at the time and place aforesaid, All letters, copies of letters, correspondence, memorandums, telegrams, copies of telegrams, written communications and copies of written communications, between the Hon. Edwin C. Johnson, U. S. Senator for the State of Colorado and Chairman of the Senate Committee on Interstate and Foreign Commerce, individually and as chairman of said committee, or any agent, employee or servant of said senator or committee and Federal Communications Commission or any member, agent, attorney, employee or servant thereof, referring or relating to or in any wise appertaining to color television, or experiments, controversies, issues or disputes with respect thereto, or to the adoption or non-adoption of standards for color television broadcasting, or the issuance or non-issuance of permits or licenses therefor, together with

all copies, drafts, and vouchers relating to the said documents, and all other documents, letters, and paper writings whatsoever, that can or may afford any information or evidence in said cause. And this you shall in nowise omit, under the penalty of the law in that case made and provided.

To the Marshal of the Northern District of Illinois to execute and return in due form of law.

Witness, the Honorable Philip L. Sullivan, Judge of the said Court, at Chicago, in said District, this 8th day of November, in the year of our Lord one thousand nine hundred and Fifty, and of the Independence of the United States of America the 175th year.

Roy H. Johnson, Clerk. (Seal.)

[fol. 800] STATE OF ILLINOIS,
County of Cook—ss:

S. Huber Adams, being duly sworn, on his oath, deposes and states that on the 9th of Nov. A D 1950 he served the within Subpoena on the within named Federal Communications Commission and delivered to Mrs. M. L. Holleman (Secretary to Regional) a true copy of thereof.

S. Huber Adams, Served by La Salle Process Servers.

(Seal.) Subscribed and sworn to before me this 10th day of November A D 1950.

Beatrice Leibovitz, Notary Public.

[fols. 801-803] DISTRICT COURT OF THE UNITED STATES OF
AMERICA, NORTHERN DISTRICT OF ILLINOIS

Subpoena Duces Tecum. Case No. 50C 1459

The President of the United States of America
To Columbia Broadcasting System, Inc.—Greeting:

We command you, that all business and excuses being laid aside, you and each of you attend before the Honorable J. Earl Major, Philip L. Sullivan and Walter J. LaBuy, *en banc*, Judges of the District Court of the United States

for said District, on the 14th day of November, A. D. 1950, at 10:30 o'clock in the forenoon in Room 605 United States Court House in Chicago, in said District, to testify and give evidence in a certain cause now pending and undetermined in said Court, wherein Radio Corporation of America, National Broadcasting Company, Inc. and RCA Victor Distributing Corporation, are Plaintiffs and United States of America, Federal Communications Commission and Columbia Broadcasting System, Inc., are Defendants, on the part of Pilot Radio Corporation, applicant for Intervention, as Plaintiff, And that you also diligently and carefully search for, examine, and inquire after and bring with you, and produce at the time and place aforesaid, All letters, copies of letters, correspondence, memorandums, telegrams, copies of telegrams, written communications and copies of written communications between the Hon. Edwin C. Johnson, U. S. Senator for the State of Colorado and Chairman of the Senate Committee on Interstate and Foreign Commerce, individually and as chairman of said committee, or any agent, employee or servant of said senator or committee and Columbia Broadcasting System, Inc., or any officer, agent, attorney, employee or servant thereof, referring or relating to or in any wise appertaining to color television, or experiments, controversies, issues or disputes with respect thereto, or to the adoption or non-adoption of standards for color television broadcasting, or the issuance or non-issuance of permits or licenses therefor, together with all copies, drafts, and vouchers relating to the said documents, and all other documents, letters, and paper writings whatsoever, that can or may afford any information or evidence in said cause. And this you shall in nowise omit, under the penalty of the law in that case made and provided.

To the Marshal of the Northern District of Illinois to execute and return in due form of law.

Witness, the Honorable Philip L. Sullivan, Judge of the said Court, at Chicago, in said District, this 8th day of November, in the year of our Lord one thousand nine hundred and Fifty, and of the Independence of the United States of America the 175th year.

Roy H. Johnson, Clerk.

[fol. 804] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

NOTICE—Filed November 10, 1950

To: Kirkland, Fleming, Green, Martin & Ellis, 33 N. LaSalle Street, Chicago, Illinois, Attorneys for Plaintiffs;
Otto Kerner, U. S. District Attorney, U. S. Court House, Chicago, Illinois, Attorney for Defendants;

Arvey, Hodez & Mantynband, 1 N. La Salle Street, Attorneys for Columbia Broadcasting Co.;

Shapiro & Shiff, 38 S. Dearborn, Attorneys for Pilot Radio Corporation.

You and each of you are hereby notified that on Friday, November 10, 1950 at the hour of 10:00 A.M. in the forenoon, or as soon thereafter as counsel can be heard, I shall appear before his Honor, Judge Phillip L. Sullivan in Room 605, United States Court House, Chicago, Illinois, or before such other judge as may be sitting in his place and stead, and then and there ask leave to file an intervening Petition and Appearance of Sightmaster Corp., a copy of which Petition is hereto attached and served upon you.

At which time and place you may appear if you so see fit.

Carl Pomerance, Attorney for Sightmaster Corp.,
135 S. La Salle Street, Fr. 2-1815.

[fol. 805] STATE OF ILLINOIS,
County of Cook, ss.:

Margaret Burke, being first duly sworn on oath deposes and says that she served the foregoing notice by mailing an exact copy to the parties in a sealed envelope, 1st class mail, U. S. Postage prepaid and depositing in U. S. mail chute at 135 S. La Salle St., this 8th day of November, 1950.

Margaret Burke.

Subscribed and sworn to before me this 8th day of November, 1950. David H. Mendelsohn, Notary Public.

[fol. 805a] [File endorsement omitted.]

[fol. 806] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

PETITION TO INTERVENE—Filed November 10, 1950

Your Petitioner, Sightmaster Corp., a corporation, by Carl Pomerance, its attorney, respectfully represents unto this Honorable Court as follows:

1. That it is a corporation duly organized and existing under and by virtue of the laws of the State of New York; that its principal office and factory is located at 111 Cedar Street, New Rochelle, New York, and that said corporation is now and has been engaged in the manufacture and sale of television receivers and television glass; that said corporation has a very substantial investment in said enterprise and has been receiving revenue from, and been selling, distributing and delivering to manufacturers, distributors and dealers, television sets and television glass throughout the United States.

2. That on or about the 11th day of October, 1950 there were, in the United States, about 107 television stations licensed by the Federal Communications Commission to broadcast and were broadcasting in black and white; that there were approximately eight million (8,000,000) black and white television receiving sets owned by the public.

[fol. 807] 3. That on said 11th day of October, 1950 the Federal Communications Commission authorized the Columbia Broadcasting System, Inc. to begin commercial Broadcasting of its color television system which would materially affect the use, operation and reception of the eight million (8,000,000) television sets owned by the general public representing a purchase price of approximately Two Billion Dollars (\$2,000,000,000.00).

4. That because the petitioner corporation is in the manufacture, sale and distribution of television receivers and television glass; and because the order of the Federal Communications Commission authorizing the Columbia Broadcasting System is incompatible with the television receivers manufactured, sold and distributed by the plaintiff; and since said system impairs the advantages of compatibility now possessed by the existing television receivers and since your petitioner corporation has an interest in many of the issues set forth and contained in the Complaint in this cause,

and a determination and finding upon the issues will materially affect not only the substantial investment of the petitioner corporation in its present office and factory, machinery, and equipment, but also will affect the future capital income of said petitioner corporation, and since your petitioner corporation does have a substantial interest in and to the various issues involved in the proceeding, your petitioner corporation respectfully prays that this Honorable Court will permit it to intervene as a party to this cause, file its appearance, receive notice of the various motions and orders and also be given leave to plead as may be necessary or required.

Wherefore your petitioner prays that an Order be entered authorizing it to intervene in the above cause, file its appearance, receive notice of hearings and plead as may be required.

Sightmaster Corp., a corporation, by Carl Pomerance, Attorney for Petitioner.

Carl Pomerance, Attorney for Sightmaster Corp., 135 S. La Salle Street, Franklin 2-1815.

[fols. 808-809] *Duly sworn to by Carl Pomerance. Jurat omitted in printing.*

[fol. 810] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

INTERVENING COMPLAINT OF SIGHTMASTER CORP.—Filed November 14, 1950

Sightmaster Corp. a New York Corporation, leave of Court first had and obtained, intervenes in the above entitled cause and for its complaint herein alleges:

1. It brings its action pursuant to the provisions of the Communications Act of 1934 as amended (48 Stat. 1064, 1093 and 63 Stat. 108; 47 U. S. C. Section 402 (a)) and of Title 28 United States Code (26 U. S. C. Sections 1336, 1398, 2284, 2321-25) and Section 10 of the Administrative Procedure Act (60 Stat. 243; 5 U. S. C. Section 1009), to enjoin, set aside, annul and suspend an order of the Federal Communications Commission (hereinafter called the

"Commission") adopted October 10, 1950 in proceedings entitled "In the Matters of Amendment of Section 3.606 of the Commission's Rules and Regulations (Docket Numbers 8736 and 8975); Amendment of the Commission's Rules, Regulations and Engineering Standards concerning the Television Broadcast Service (Docket Number 9175) and Utilization of Frequencies in the Band 470 to 890 Mcs. for Television Broadcasting (Docket Number 8975)", (the order being hereinafter called the "Order"). The effective date of the Order is November 20, 1950.

[fol. 811] 2. Sightmaster Corp. is a corporation duly organized and existing under the laws of the State of New York.

3. The Commission is an administrative tribunal created by said Communications Act of 1934, charged with carrying out the provisions of and enforcing said Act.

4. The United States of America is made a defendant in this suit pursuant to the provisions of the Act of June 25, 1948 (62 Stat. 969; 28 U. S. C. Section 2322), and said Communications Act of 1934 (48 Stat. 1064, 1093 and 63 Stat. 108, 47 U. S. C. Section 402 (a)).

5. Sightmaster Corp. is engaged in the manufacture, sale and distribution of television receivers and television glass. The company has been engaged in the manufacture of said television receivers and television glass since 1947 and has spent large sums of money for machinery, equipment, development work and facilities in the manufacture of television receiver sets pursuant to the standards set by the Commission in 1941.

6. Since said company has commenced the manufacture of television sets in 1947, it has manufactured and sold sets in excess of One and One Half Million Dollars (\$1,500,000.00) retail price.

7. The company has an investment exceeding One Hundred Twenty Five Thousand Dollars (\$125,000.00) in plant machinery, patents, inventory and equipment devoted to the manufacture of television receiver sets.

8. The television receiver sets which are sold by the company to its purchasers, are in turn, sold by them to the general public and their demand is based upon the public's demand for such receivers and sets.

9. The demand for sets by the general public and consequent demand for sets from the Company by the organizations which it supplies, is dependent upon the quality of

the television programs broadcast to the general public; this in turn is dependent upon the willingness of advertisers [fol. 812] to spend money upon the development of high-class television programs and upon the willingness of the people developing television to spend money in such development.

10. Anything which affects the high quality of broadcasts to the public directly affects the consumption of the products marketed by Sightmaster Corp.

11. The company, at the present time, and the general industry, to the best information of this company, has purchased inventory and is tooled for and concentrating upon the manufacture of television receiver sets under the existing regulations.

12. Because of the fact that it sells directly to large chain and retail houses, who in turn, sell directly to the public, the Company is close to the retail market and has a first hand picture of the buying public's wants and requirements. On the basis of a market analysis made by the Company with its customers and their public, it has found that since television receivers have advanced out of the hobby stage to the point where they are becoming a home necessity, the public is demanding better quality pictures. This is demonstrated by the fact that the refinements incorporated in Sightmaster Corp. and other sets to give better definition on 4 megacycle broadcast and reception, have caused an increased demand for all such sets. Any conditions imposed upon the manufacturing industry which interfere with its attempts to improve the quality of pictures necessarily results in adverse buyer reaction and consequently in the lessening of the demand for television receiver chassis.

13. The Company has had experience with the public's reaction to and lack of acceptance of short-wave adapters and FM adapters, gadgets which were marketed in an attempt to give the standard radio sets these additional receptions. The Company has found that the American housewife would not have her furniture altered by these additions. The Company has been totally unable to market this type of equipment.

[fol. 813] 14. The development of a widely accepted television industry; the phenomenal growth in the use of television receivers, in the quality of television broadcasting and receiving; the great increase in the amount of money

spent on advertising in this industry, all have been bot-
tommed on the fact that the industry could make investments
in and spend money upon the manufacture of sets with the
assurance that the standards for television receivers had
been firmly established as a result of extended hearings
before the Federal Communications Commission prior to
1941 and by the continued manufacture of sets pursuant
to the standards as promulgated by the Commission in 1941.

15. This was the situation at the time the order com-
plained of herein was entered by the Federal Communica-
tions Commission.

16. The standard television broadcast of today as estab-
lished by the FCC standards is a broadcast of 30 still pic-
tures a second with each picture have 525 lines. The CBS
proposed color television broadcast would be a broadcast
of 24 still pictures a second, each having 405 lines. Every
set manufactured by Sigmastar Corp. and every set manu-
factured by the industry today is able to receive only the
broadcast of 30 still pictures a second, containing 525 lines
each. This means that if no additional work is done on the
television receiver sets in the hands of the public and no
additional money is expended, the television receivers in
the hands of the public could not receive the CBS color
television broadcasts in either black or white, or color. In
order to permit receiving the CBS color broadcasts in black
and white, the present set would have to have placed in
it what is called an "adapter". Estimates indicate this
accessory, if manufactured in quantity, would retail at
\$40.00 to \$50.00 plus installation costs, and after it has been
put into the present television receiver, that receiver could
[fol. 814] still not get the color picture being broadcast
by CBS. In order to get the CBS color picture, an addi-
tional gadget would have to be purchased and put upon
the television receiver. This gadget is sometimes referred
to as a "color converter" and consists of a large wheel
which is placed in front of the television receiver and wheel
spins during the receptions of the color broadcast at 1440
revolutions per minute, plus a motor necessary to spin the
color wheel and synchronize the equipment. Estimates
indicate that this gadget can be manufactured in quantity
at \$100.00 to \$200.00. Thus, only by an additional expendi-
ture of approximately \$200.00, which is more than the
present retail price of many black and white television
receiver sets which deliver equal picture size, can the tele-

vision receiver sets in the home possible be adapted to receive the CBS color picture. In addition to the so-called adaptor, other structural changes are necessary; a change in the fly-back transformer which will cause new electronic complications. Were this change made, the picture received would not be of the same height, fidelity and definition which it is now possible to receive on standard black and white receivers, and is limited to a 10 or 12½ inch picture. Such degradation cannot be corrected as long as the broadcast is one of 24 still pictures a second, containing 405 lines.

17. No satisfactory black and white picture comparable in quality to other black and white pictures, can be produced on any existing 16 or 19 inch television receiver by use of the so-called adapter. For this reason along, this adaptor is not feasible or commercially practical.

18. There are in process of development, compatible color-television systems that will broadcast color television with 525 lines per picture and 30 pictures per second and which will serve all 8 to 10 million owners with television pictures in black and white as well as owners of new color television receivers with color pictures.

[fol. 815] Such pictures received in either black and white or color will be 16 inch, 20 inch or 24 inch in diameter, of fine definition without annoying flicker and provide a 25 to 40 million viewing audience to justify the advertising expense for good programs and finally, to make color television an added form of home entertainment.

The result is that the present television receiver owners will not be required to make additional expenditures and will not be afraid of set obsolescence.

19. Since the adoption of the Order of the Commission of October 10, 1950, various statements and broadcasts have been made by CBS and its employees which, in effect, informed the public that it would be undesirable for the public to purchase a standard black and white television receiver for a period of at least six months.

20. As a result of the action of the Commission in promulgating its order of October 10, 1950 and as a result of such commentaries on the order by persons, informed and uninformed, orders for purchase of standard black and white television receiver sets have fallen off considerably. Orders for sets in the future have decreased with the result that Sightmaster Corp. has suffered a substantial financial loss in that it has stopped all its television sets production at

the present time until a clarification and determination of this issue, at which time the company will commence production again. The information and publicity has materially affected the orders and purchases of television receiver sets by this company to the extent that, at the present time, it is no longer profitable to continue the manufacture and productions.

21. The effect of the Order complained of is to impair the existing market for black and white television receivers to the irreparable injury of Sightmaster Corp.

[fol. 816] 22. The effect of the order is to authorize the commercial broadcast of CBS color programs to the exclusion of other color programs and other color television standards with the result that the customers of Sightmaster Corp. will not be able to receive such color broadcast programs, even in black and white, without great additional expense and inconvenience of operation. This in turn results in destroying the reputation that Sightmaster Corp. has built up over a period of years in the radio and television receiver field.

23. The effect of the order of the Commission is to deprive Sightmaster Corp. of income which was assured prior to the order of the Commission.

24. The Commissions' order is illegal and void and beyond the power, authority and jurisdiction of the Commission for the following reasons:

a. The order deprives Sightmaster Corp. of property without the process of law, contrary to the Fifty Amendment of the Constitution of the United States.

b. The order of the Commission is arbitrary and capricious and results from the failure of the industry to comply with conditions imposed by the Commission which were illegal and beyond its authority to impose.

c. The order is unsupported by substantial evidence.

d. The substantial evidence produced by the industry as a whole demonstrates that the system which the Order of the Commission seeks to authorize is detrimental to the best interests of the public and of the advance of television broadcasting.

e. The order is contrary to the public interest, convenience and necessity.

f. The order violates Section 303 (g) of the Communications Act of 1934.

[fols. 817-818] g. The order is contrary to the terms of the Commission's Notice of July 11, 1949.

25. The intervening complainant has no adequate remedy at law.

WHEREFORE:

1. Intervenor prays that the specifically constituted Court of three judges convened to hear this matter issue a temporary interlocutory injunction herein restraining, enjoining and suspending, until further order of this Court, the promulgation operation and execution of the order of October 10, 1950 of the Federal Communications Commission.

2. That after final hearing, this Court order, adjudge and decree that said order of the FCC is beyond the lawful authority of the Commission, is in violation of the legal rights of the intervenor, and is wholly void, arbitrary and unreasonable and that its promulgation and operation be perpetually enjoined so that it be vacated and set aside.

3. That the intervenor have such other and further relief in the premises as is equitable and just and as may be deemed by this Court to be adequate and proper.

Sightmaster Corp. a New York corporation by
Michael L. Kaplan, President.

Carl Pomerance Attorney for Intervenor, 135 S.
La Salle Street.

Duly sworn to by Michael L. Kaplan. Jurat omitted in printing.

[fol. 819]

[Title omitted]

Notice—Filed November 10, 1950

Please take notice, that on November 10, 1950, at the opening of Court in the forenoon of that day, or as soon thereafter as counsel can be heard, the undersigned will appear before the Honorable Philip L. Sullivan, Judge of the aforesaid Court, in the courtroom usually occupied by him in the United States Court House, Chicago, Illinois, and

shall present to the Court the attached written motion for an Order granting leave to The Radio Craftsmen Incorporated, to intervene as a plaintiff in the above entitled proceeding, and for leave to join with the plaintiffs and to adopt their Complaint and Motion for Temporary Injunction and other relief.

Kelly, Kelly & Kelly, By: John Kelly, Jr. A member of the Firm. Attorneys for The Radio Craftsmen, Incorporated.

Dated: November 10, 1950.

[fol. 820] To: Weymouth Kirkland, Esq. and Kirkland, Fleming, Green, Martin & Ellis, Esqs. Attorneys for Radio Corporation of America, National Broadcasting Company, Inc. and RCA-Victor Distributing Corporation, 33 North La Salle Street, Chicago, Illinois. Cahill, Gordon, Zachary & Reindel, Esqs. of counsel to Radio Corporation of America, National Broadcasting Company, Inc. and RCA-Victor Distributing Corporation, 63 Wall Street, New York, New York. Hon. J. Howard McGrath, Attorney General of the United States, Washington, D. C. Otto Kerner, Jr., Esq. United States Attorney for the Northern District of Illinois Chicago, Illinois. Benedict P. Cottone, Esq. General Counsel, Federal Communications Commission, Washington, D. C. Schapiro & Schiff attorneys for Pilot Radio Corporation.

[fol: 821] Received copies of the foregoing Notice and the foregoing Motion to Intervene as a Plaintiff.

Weymouth Kirkland, Esq. and Kirkland, Fleming, Green, Martin & Ellis, Esqs. Attorneys for Radio Corporation of America, National Broadcasting Co., Inc. and RCA-Victor Distributing Corporation. By: Andrew C. Hamilton. Honorable J. Howard McGrath, Attorney General of the United States. By: Otto Kerner, Jr., Esq., United States Attorney for the Northern District of Illinois. By: Anthony Scoriaieon. Benedict P. Cottone, Esq., General Counsel, Federal Communications Commission. By: Arvey Hades & Mantynband. By: LeRoy R. Krein. Schapiro & Schiff. By: B. Schiff, Attorney for Pilot Radio Corporation.

[fol. 822] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

MOTION TO INTERVENE AS A PLAINTIFF—Filed November 10,
1950

To the Judges of the District Court of the United States,
for the Northern District of Illinois, Eastern Division:

The Radio Craftsmen Incorporated, an Illinois Corporation, moves to intervene as a plaintiff in the above entitled cause on the following grounds:

1. Applicant is a corporation engaged in the manufacture of television receivers with its principal place of business in Chicago, Illinois.

2. The above entitled cause was commenced in this court by the filing of a Complaint on October 17, 1950.

3. Said complaint seeks to have a certain order of the Federal Communications Commission approving the CBS color television system declared null and void and the promulgation, operation and execution thereof restrained and enjoined.

[fol. 823] 4. Applicant is interested in the above entitled action in that it has been adversely affected by said order of the Federal Communications System and has suffered and will continue to suffer damage as a result thereof unless said order is enjoined and set aside, all as more fully set forth in applicant's proposed complaint herein, a copy of which is attached hereto.

5. Applicant has the right, conferred by statute of the United States, to intervene in this action; see Communications Act of 1934 as amended (48 Stat. 1064, 1093, 65 Stat. 108; 47 U.S.C. Section 402 (a) and the provisions of Title 28 of the United States Code (28 U.S.C., Sections 2321 to 2325 inclusive).

6. The Radio Craftsmen, Incorporated, is inadequately represented in the present proceedings and that it may be bound by a judgment in these proceedings.

7. In the alternative applicant submits that the conditional right conferred upon it by 63 Stat. 108; Title 26 U.S.C. Section 2323 should be recognized and affirmed by this Court inasmuch as The Radio Craftsmen, Incorporated and is a corporation interested in the question before the Fed-

eral Communications System which is the subject of this complaint heretofore filed in this cause; and inasmuch as applicant's claim and the main action have a question of law and fact in common; and inasmuch as the intervention of applicant will not delay or prejudice adjudication of the rights of the original parties to this action.

The Radio Craftsmen, Incorporated, By: John H. Cashman, President.

Kelly, Kelly and Kelly, Attorneys for Applicant for Intervention.

[fols. 824-825] *Duly sworn to by John H. Cashman. Jurat omitted in printing.*

[fol. 826] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

INTERVENING COMPLAINT—Filed November 14, 1950

The Radio Craftsmen Incorporated, an Illinois corporation, leave of Court first had and obtained, intervenes in the above entitled cause and for its complaint herein alleges:

1. It brings its action pursuant to the provisions of the Communications Act of 1934, as amended (48 Stat. 1064, 1093 and 63 Stat. 108; 47 U.S.C. Section 402 (a)) and of Title 28 United States Code (26 U.S.C. Sections 1336, 1398, 2284, 2321-25) and Section 10 of the Administrative Procedure Act (60 Stat. 243; 5 U.S.C. Section 1009), to enjoin, set aside, annul and suspend an order of the Federal Communications Commission (hereinafter called the "Commission") adopted October 10, 1950 in proceedings entitled "In the Matters of Amendment of Section 3.606 of the Commission's Rules and Regulations (Docket Numbers 8736 and 8975), Amendment of the Commission's Rules, Regulations [fol. 827] and Engineering Standards concerning the Television Broadcast Service (Docket Number 9175) and Utilization of Frequencies in the Band 470 to 890 Mcs. for Television Broadcasting (Docket Number 8976)", (the order being hereinafter called the "Order"). The effective date of the Order is November 20, 1950.

2. The Radio Craftsmen Incorporated, is a corporation duly organized and existing under the laws of the State of

Illinois. It resides in the Northern District of Illinois, Eastern Division.

3. The Commission is an administrative tribunal created by said Communications Act of 1934, charged with carrying out the provisions of and enforcing said Act.

4. The United States of America is made a defendant in this suit pursuant to the provisions of the Act of June 25, 1948 (62 Stat. 969; 28 U.S.C. Section 2322), and said Communications Act of 1934 (48 Stat. 1064, 1093, and 63 Stat. 108, 47 U.S.C. Section 402 (a)).

5. The Radio Craftsmen Incorporated, is engaged in the manufacture and sale of radios and high fidelity custom television receiver chassis. Since 1943 the Company has been engaged in the manufacture of radio receivers and since 1949 of custom television receiver chassis, and has spent huge sums for development work and facilities for the manufacture of such television receiver chassis, pursuant to standards set up by the Federal Communications Commission in 1941.

[fol. 828] 6. In 1950 up to the date of the filing of this complaint the Company has sold in excess of 3,000 television receiver chassis, at a total cost to the purchasers in excess of \$500,000.00. It is presently manufacturing 60 sets a day.

7. The Company has an investment in excess of \$167,000.00 in plant, machinery, patents and inventory devoted to the manufacture of television receiver chassis and radio receivers.

8. The television receiver chassis which are sold by the Company to its purchasers are in turn sold by such organizations direct to the general public and the demand for sets from the Company by such organizations is in turn based upon the demand by the public for such sets.

9. The demand for sets by the general public and consequent demand for sets from the Company by the organizations which it supplies is dependent upon the quality of the television programs broadcast to the general public; this in turn is dependent upon the willingness of advertisers to spend money upon the development of high-class television programs and upon the willingness of the people developing television to spend money in such development.

10. Anything which affects the high quality of broadcasts to the public directly affects the consumption of the products marketed by The Radio Craftsmen Incorporated.

11. The Company at the present time, and the industry generally, is tooled for and has bought inventory for and is concentrating its efforts on the manufacture of 16 inch tube sets or larger. Of the sets presently being manufactured by The Radio Craftsmen Incorporated, 100% are 16 inch tubes or larger.

[fol. 829] 12. Because of the fact that it sells directly to large chain and retail houses, who in turn sell directly to the public, the Company is close to the retail market and has a first-hand picture of the buying public's wants and requirements. On the basis of a market analysis made by the Company with its customers and their public it has found that since television receivers have advanced out of the hobby stage to the point where they are becoming a home necessity, the public is demanding better quality pictures. This is demonstrated by the fact that the refinements incorporated in The Radio Craftsmen Incorporated and other sets to give better definition on 4 megacycle broadcast and reception have caused an increased demand for all such sets. Any conditions imposed upon the manufacturing industry which interfere with its attempts to improve the quality of pictures necessarily results in adverse buyer reaction and consequently in the lessening of the demand for television receiver chassis.

13. The Company has had experience with the public's reaction to and lack of acceptance of short-wave adapters and FM adapters, gadgets which were marketed in an attempt to give the standard radio sets these additional receptions. The Company has found that the American housewife would not have her furniture altered by these additions. The Company has been totally unable to market this type of equipment.

14. The development of a widely accepted television industry; the phenomenal growth in the use of television receivers, in the quality of television broadcasting and receiving the great increase in the amount of money spent on advertising in this industry, all have been bottomed on the fact that the industry could make investments in and spend money upon the manufacture of sets with the assurance that [fol. 830] the standards for television receivers had been firmly established as a result of extended hearings before the Federal Communications Commission prior to 1941 and by the continued manufacture of sets pursuant to the standards as promulgated by the Commission in 1941.

15. This was the situation at the time the order complained of herein was entered by the Federal Communications Commission.

16. The Standard television broadcast of today as established by the FCC standards is a broadcast of 30 still pictures a second with each picture having 525 lines. The CBS proposed color television broadcast would be a broadcast of 24 still pictures a second, each having 405 lines. Every set manufactured by The Radio Craftsmen Incorporated, and every set manufactured by the industry today, is able to receive only the broadcast of 30 still pictures a second, containing 525 lines each. This means that if no additional work is done on the television receiver sets in the hands of the public and no additional money is expended, the television receivers in the hands of the public could not receive the CBS color television broadcasts in either black and white, or color. In order to permit of receiving the CBS color broadcasts in black and white, the present set would have to have placed in it what is called an "adapter". Estimates indicate this accessory if manufactured in quantity would retail at \$40.00 to \$50.00 plus installation costs, and after it has been put into the present television receiver, that receiver could still not get the color picture being broadcast by CBS. In order to get the CBS color picture an additional gadget would have to be purchased and put upon the television receiver. This gadget is sometimes referred to as "color converter" and consists [fol. 831] of a large wheel which is placed in front of the television receiver and while spins during the reception of the color broadcast at 1440 revolutions per minute plus a motor necessary to spin the color wheel and synchronize the equipment. Estimates indicate that this gadget can be manufactured in quantity at \$100.00 to \$200.00. Thus only by an additional expenditure of approximately \$200.00, which is more than the present retail price of many black and white television receiver sets which deliver equal picture size, can the television receiver sets which are now in everyone's home be adapted to receive the CBS color picture. But even when this is done the picture received is not of the same high fidelity and definition which it is now possible to receive on standard black and white receivers and such degradation cannot be corrected as long as the broadcast is one of 24 still pictures, a second, containing 405 lines.

17. Even after the expenditure of these sums for adapters and converters, set owner will receive a picture which is degraded, has a higher flicker content, and is limited to a picture of 10 inches to 12½ inches in diameter as compared to the 16 inch or larger picture which he now is accustomed to receive.

18. On the other hand, there are in process of development, compatible color television systems that will broadcast color television with 525 lines per picture and 30 pictures per second.

The color broadcast of such systems will serve all 8 to 10 million owners with television pictures in black and white and also serve owners of new color television receivers with pictures in color.

Such pictures received in either black and white or color will be 16 inch, 20 inch or 24 inch in diameter, of fine definition without annoying flicker and provide a 25 to 40 million viewing audience to justify the advertising expense for good programs and finally, to make color television an added form of home entertainment.

The result is that the present television receiver owners will not be required to make additional expenditures and will not be afraid of set obsolescence.

19. The Radio Craftsmen Incorporated, is a member of the Radio and Television Manufacturers Association, formerly the Radio Manufacturers Association, which was made a party by the Commission to its hearings.

20. Since the adoption of the order of the Commission of October 10, 1950, various statements and broadcasts have been made by CBS and its employees which in effect informed the public that it would be undesirable for the public to purchase a standard black and white television receiver for a period of at least six months.

21. As a result of the action of the Commission in promulgating its order of October 10, 1950, and as a result of such commentaries on the order by persons, informed and uninformed, orders for the purchase of standard black and white television receiver sets have fallen off considerably. Orders for sets in the future have decreased with the result that The Radio Craftsmen Incorporated has and will suffer substantial financial loss.

22. The effect of the order complained of is to impair the existing market for black and white television receivers to

the irreparable injury of The Radio Craftsmen Incorporated.

[fol. 833] 23. The effect of the order is to authorize the commercial broadcast of CBS color programs to the exclusion of other color programs and other color television standards with the result that the customers of The Radio Craftsmen Incorporated, will not be able to receive such color broadcast programs, even in black and white, without great additional expense and inconvenience of operation. This in turn results in destroying the reputation that the Radio Craftsmen Incorporated has built up over a period of years in the radio and television receiver field.

24. The effect of the order of the Commission is to deprive the Radio Craftsmen Incorporated, of income which was assured prior to the order of the Commission.

25. The Commission's order is illegal and void and beyond the power authority and jurisdiction of the Commission for the following reasons:

A. The order deprives the Radio Craftsmen Incorporated of property without the process of law, contrary to the Fifth Amendment of the Constitution of the United States.

B. The order of the Commission is arbitrary and capricious and results from the failure of the industry to comply with conditions imposed by the Commission which were illegal and beyond its authority to impose.

C. The order is unsupported by substantial evidence.

D. The substantial evidence produced by the industry as a whole demonstrates that the system which the order of the Commission seeks to authorize is detrimental to the best interests of the public and of the advance of television broadcasting.

[fol. 834] E. The order is contrary to the public interest, convenience and necessity:

F. The order violates Section 303 (g) of the Communications Act of 1934.

G. The order is contrary to the terms of the Commission's notice of July 11, 1949.

26. The intervening complainant has no adequate remedy at law.

Wherefore:

1. Intervenor prays that the specifically constituted Court of three judges convened to hear this matter issue a temporary interlocutory injunction herein restraining, enjoining and suspending until further order of this Court, the promulgation, operation and execution of the order of October 10, 1950 of the Federal Communications Commission.

2. That after final hearing this Court order, adjudge and decree that said order of the FCC is beyond the lawful authority of the Commission, is in violation of the legal rights of the intervenor, and is wholly void, arbitrary and unreasonable and that its promulgation and operation be perpetually enjoined so that it be vacated and set aside.

3. That the intervenor have such other and further relief in the premises as is equitable and just and as may be deemed by this Court to be adequate and proper.

The Radio Craftsmen, Incorporated, an Illinois Corporation. By: John H. Cashman, President.

Kelly, Kelly & Kelly. By: John J. Kelly, Attorneys for Intervenor, 111 W. Washington St.

[fols. 834a-835] *Duly sworn to by John H. Cashman.
Jurat omitted in printing.*

[fol. 836] IN UNITED STATES DISTRICT COURT

[Title omitted]

NOTICE—Filed November 14, 1950

To: Arvey, Hodes and Mantynband, One North La Salle Street, Chicago, Illinois.

Kirkland, Fleming, Green, Martin & Ellis, 33 North La Salle Street, Chicago, Illinois.

Otto Kerner, Jr., United States Attorney for the Northern District of Illinois, U. S. Courthouse, Chicago, Illinois.

Hon. J. Howard McGrath, Attorney General of United States, Washington, D. C.

Benedict P. Cottone, Esq., General Counsel Federal Communications Commission, Washington, D. C.

Please take notice, that on Tuesday, November 14, 1950, at the hour of 10:30 A.M., or as soon thereafter as counsel

can be heard, we shall appear before Judges Major, Sullivan and La Buy, in the room usually occupied by Judge Sullivan as a court room in the Federal Courts Building, Chicago, and thereupon present and file the motion to intervene and pleading in intervention on behalf of Emerson Radio & Phonograph Corp., copies of which motion to intervene and pleading in intervention and the order entered by Judge Philip L. Sullivan on November 10, 1950, abbreviating the time for service of said motion, are hereto attached and made a part of this notice.

At which time and place you may appear if you see fit.
Nash, Ahern & McNally, Attorneys for Emerson Radio & Phonograph Corp., Applicant for Intervention. Martin J. McNally.

[fol. 837] Received this 10th day of November, 1950, a copy of foregoing Notice, motion to intervene, pleading in intervention and order.

Arvey Hodes & Mantynband, One North La Salle St., Chicago, Ill., Attorneys for Columbia Broadcasting System, Inc., Defendant-Intervenor.

Kirkland, Fleming, Green, Martin & Ellis, 33 North La Salle St., Chicago, Illinois, Attorneys for Plaintiffs.

Otto Kerner, Jr., United States Attorney for the Northern District of Illinois, U. S. Court House, Chicago, Illinois.

[fol. 838]

UNITED STATES DISTRICT COURT

[Title omitted]

MOTION TO INTERVENE—Filed November 14, 1950

Emerson Radio & Phonograph Corp., a Corporation, by Nash, Ahern & McNally, its attorneys, and Paul, Weiss, Rifkind, Wharton & Garrison, of counsel, moves for leave to intervene and be heard as a party plaintiff in this action on the following grounds:

(a) that it is engaged in the sale and distribution of television receivers;

(b) that it is affected by the order of the defendant, Federal Communications Commission, setting standards for the commercialization of color television;

(c) that it is interested in this action pursuant to the provisions of the Communications Act of 1934, as amended, 47 U. S. C. Sec. 402 (a) and 28 U. S. C. Sec. 2323; and

(d) that its interest and the main action raise common questions of law and fact.

A copy of applicant's pleading in intervention is attached hereto.

Nash, Ahern & McNally. By: Martin J. McNally (a Member of said Firm), Attorneys for Emerson Radio & Phonograph Corp., 111 W. Washington St., Chicago 2, Illinois.

Of Counsel:

Paul, Weiss, Rifkind, Wharton & Garrison, 61 Broadway, New York 6, N. Y.

[fol. 838a] [File endorsement omitted]

[fol. 839] STATE OF ILLINOIS,
County of Cook, ss:

Martin Kleinbard, being first duly sworn on oath, deposes and says, that he served the foregoing notice upon each of Hon. J. Howard McGrath, Attorney General of the United States, Washington, D. C., and Benedict P. Cottone, Esq., General Counsel for Federal Communications Commission, Washington, D. C., named in said notice, as parties to receive said notice, by mailing, Registered Mail, return receipt requested, in the United States Post Office, located in the State of Illinois Building, 160 North La Salle Street, Chicago, Illinois, on the 10th day of November, 1950 at 4:45 o'clock P.M., two (2) envelopes, each one of such envelopes containing a true and correct copy of the said notice, together with a copy of motion to intervene, pleading in intervention and order, therein referred to, and addressed to one of the foregoing parties, respectively, named in the said notice, at his respective address, as shown by said notice; that upon each of the said envelopes, there was placed the proper amount of United States postage stamps; that upon each of the said envelopes there was the return address

of Nash, Ahern & McNally, 111 West Washington Street,
Chicago 2, Illinois.

Martin Kleinbard.

Subscribed and sworn to before me this 10th day of
November, A.D. 1950. Nina Hulbert, Notary
Public. (Seal.)

[fol. 839a] [File endorsement omitted]

[fol. 840] UNITED STATES DISTRICT COURT

[Title omitted]

Pleading in intervention—Filed November 14, 1950

Emerson Radio & Phonograph Corp. applicant-inter-
venor herein, for its pleading in intervention, alleges:

FIRST: That it is a corporation duly organized and exist-
ing under the laws of the State of New York.

SECOND: That it is engaged, among other things, in the
business of manufacturing, selling and distributing tele-
vision receivers to the public.

THIRD: That over one-half a million of its television
receivers are presently in use by the public and that this
number is being constantly increased by a sales volume of
approximately 40,000 per month.

FOURTH: That the Federal Communications Commission
(hereinafter referred to as "the Commission") is an ad-
ministrative tribunal created by the Communications Act
of 1934 and is charged by said Act, among other things,
with the regulation of transmission by radio of writings,
signs, signals, pictures and sounds of all kinds, including
all instrumentalities, apparatus and services incidental
to such transmission.

FIFTH: That all television receivers manufactured by
[fol. 841] the applicant for intervention herein are usable
and salable only insofar as they are capable of receiving
television broadcasts transmitted in accordance with the
rules and regulations and engineering standards promul-
gated by the Commission pursuant to the aforementioned
statutory authority.

SIXTH: That, therefore, the applicant for intervention

herein has a deep concern and interest in, and will be seriously affected by, any rules, regulations and standards promulgated by the Commission.

SEVENTH: That on July 11, 1949 the Commission issued a "Notice of Further Proposed Rule Making" with respect to amendment of §3.606 of the Commission's Rules & Regulations, amendment of the Commission's Rules, Regulation & Engineering Standards concerning the television broadcasting service.

EIGHTH: That in said notice the Commission proposed, among other things, to consider changes in transmission standards looking toward the commercialization of a color television system on a showing that such a system could operate in a six megacycle channel and that the transmissions of such a system would be receivable on existing television sets by making relatively minor modifications to such sets.

NINTH: That pursuant to said notice and amendments thereto, during the period between September 26, 1949 and May 26, 1950 hearings and field tests were conducted by the full Commission with respect to three color television systems—those proposed by Radio Corporation of America (hereinafter referred to as "the RCA system"), by Columbia Broadcasting System, Inc. (hereinafter referred to as "the CBS system") and by Color Television Incorporated.

[fol. 842] TENTH: That during the course of these hearings and on February 16, 1950, the applicant for intervention herein petitioned the Commission for leave to intervene in the Commission's proceedings to present its views on the proper development of color television and the problems faced by the manufacturers of television receivers, and its suggestions as to the color television system to be adopted by the Commission in the public interest.

ELEVENTH: That by letter dated February 21, 1950 the Commission denied said petition on the grounds that the testimony proposed related to policy rather than to scientific matters, and that the proceedings were advanced too far to warrant intervention for that purpose.

TWELFTH: That by reason of said denial and despite the applicant's deep interest hereinabove set forth, it has been refused all opportunity to express its views and to be

heard by the Commission on the transmission standards which will govern the broadcasting of color television.

THIRTEENTH: That thereafter and on October 10, 1950 the Commission issued its Order in the above described proceedings promulgating standards for the commercialization of color television.

FOURTEENTH: That the effect of the standards promulgated by said Order is to authorize the commercial broadcasting of color television by the CBS system and to exclude the commercial broadcasting of color programs by either of the other two systems or by any other system which does not comply with the standards promulgated by the Commission.

FIFTEENTH: That the CBS system as adopted is seriously defective in that it has certain limitations which appear to be inherent in the system and which gravely impair the present value and future potential of color [fol. 843] television to the public. The most important of said limitations are:

A. The CBS system has less geometric resolution than the present monochrome system. By "less geometric resolutions" is meant that the pictures broadcast by the CBS system have fewer picture elements (actually over 50% fewer) than pictures broadcast by the present monochrome system and hence lack the clarity and detail which the public has come to expect from television pictures.

B. The CBS system, as a practical matter for the present, is limited to projection receivers or to direct view tubes of 12-1/2 inches or smaller in size. This limitation is caused by the fact that the CBS system uses a color filter in the form of a color wheel whose diameter must be twice that of the tube with which it is used. Projection receivers have not had any widespread public acceptance and the trend toward larger sized direct view receivers is so marked that by the end of the year 1950 the applicant will have ceased general production of any model using tubes under 16 inches in size.

C. The CBS system is incompatible. "Incompatible" is used here to express the notion that the CBS system broadcasts are transmitted on a different standard of lines and fields per second than the present monochrome transmissions, and will not be receivable in black and white

pictures by presently existing black and white receivers unless such receivers are extensively modified at substantial cost.

SIXTEENTH: That the continuance of the public's reception of television as a major medium of entertainment and information is dependent on the production of television receivers capable of satisfactory performance which can be purchased with confidence that such receivers will [fol. 844] provide complete television service for a reasonable number of years without the necessity for extensive and expensive modification.

SEVENTEENTH: That television receivers manufactured to transmit a color television system suffering from the aforementioned limitations will not be capable of satisfactory performance and cannot be purchased with assurance that they will provide complete television service for a reasonable number of years without the necessity for extensive and expensive modification.

EIGHTEENTH: That the Commission's decision adopting and crystallizing a color television system suffering from the aforementioned limitations has already caused confusion in the public's mind and has already caused a sharp decline in the public's demand for television receivers as reflected in the over 60% reduction in the applicant's backlog of unfilled orders since the issuance of said Order.

NINETEENTH: That by virtue of the foregoing, said Order has damaged and will continue to damage the applicant's business, business reputation and goodwill.

TWENTIETH: That said Order not only adopted and crystallized a color television system suffering from the aforementioned limitations but also, by its nature, has excluded and shut out the development of other systems of color television not subject to the aforementioned limitations. One such system presented to the Commission is the RCA all electronic, high definition, compatible system. [fol. 845] **Twenty-First:** That said Order, insofar as it excludes, prevents and obstructs the exploitation and development of the RCA and other all-electronic, high definition, compatible systems, and grants a preferred position to the limited and incompatible CBS system, is contrary to the declared policy and statutory requirements of the Com-

munications Act of 1934, and is illegal and void for the following reasons, among others:

A. The Communications Act of 1934 directs the Commission to exercise its authority in accordance with the statutory standard of public interest, convenience and necessity. Section 303(g) of the Communications Act specifically directs the Commission to exercise its authority so as to "encourage the larger and more effective use of radio in the public interest". It is clear that the Commission's action, insofar as it obstructs and stifles the exploitation and development of high-definition, compatible systems of color television, and freezes the art under the limitations of the CBS system as described above, is in conflict with the statutory standard under which the Commission is required to act.

B.—The Communications Act of 1934, as the Supreme Court of the United States has declared, recognizes that the field of broadcasting is one of free competition. Sections 311, 313 and 314 of the Communications Act specifically make the provisions of the Sherman Act applicable to broadcasting. The Commission itself, in its Report on Chain Broadcasting (and in many other pronouncements) has declared that "radio broadcasting is a competitive industry. The Congress has so declared in the Communications Act of 1934, and has required the fullest measure of competition possible within physical limitations". It is apparent that the Commission's order here in question, insofar as it grants to the CBS system an exclusive and [fol. 846] monopolistic opportunity, and excludes the RCA and other all-electronic systems from equal opportunity to develop and exploit such systems, is directly contrary to the policy and mandate of the Communications Act respecting the maintenance and preservation of competition in broadcasting. As the Chairman of the Committee on Interstate and Foreign Commerce of the United States Senate declared in a letter to the Chairman of the Commission, dated November 12, 1949, the public interest requires that the standards for color television adopted by the Commission be such "that this essential improvement may be developed naturally in the traditional American, free enterprise, non-monopolistic manner".

Twenty-Second: That the record of the hearings demonstrates on its face that the Commission's rejection of the RCA system was based upon insufficient information and incomplete understanding.

Twenty-Third: That the record of the hearings demonstrates on its face the remarkable forward steps taken by the RCA system towards satisfactory color production during the comparatively short period of hearings, and the RCA petition of October 4, 1950 to the Commission asking the Commission to refrain from setting any standards until June, 1951 speaks of even further improvements already achieved, and a completely developed commercially suitable system by June, 1951.

Twenty-Fourth: That the record of the hearings demonstrates on its face that the decision to adopt the CBS system was dependent to no small extent on the Commission's anticipation that the tri-phosphors color tube, when developed, would replace the color wheel in the CBS system and thus obviate the size limitation. The development of said tube would at the same time obviate all the major [fol. 847] faults which the Commission found in the RCA system as demonstrated to it.

Wherefore, the applicant for intervention herein, prays for judgment enjoining, setting aside, annulling and suspending permanently the promulgation, operation and execution of said Order of the Commission insofar as it purports to prevent the commercial development and exploitation of the RCA system on an equal basis with the development and exploitation of the CBS system, or, in the alternative, for judgment enjoining, setting aside, annulling and suspending, temporarily, the promulgation, operation and execution of said Order of the Commission for nine months, and requiring the Commission in the interim to reopen the record and permit RCA to testify further on its system, to permit the applicant to present its viewpoint as a manufacturer to the Commission, and to permit the Commission to inform itself more thoroughly on the RCA system.

Emerson Radio & Phonograph Corp., Applicant-Intervenor.

Nash, Ahern & McNally, by: Martin J. McNally
(A Member of said Firm).

Attorneys for Emerson Radio & Phonograph Corp.,
111 W. Washington St., Chicago, Ill.

Of Counsel:

Paul, Weiss, Rifkin, Wharton & Garrison, by: Martin
Kleinbard, 61 Broadway, New York 6, N. Y.

*Duly sworn to by Benjamin Abrams. Jurat omitted in
printing.*

[fol. 847a-848] [File Endorsement Omitted].

[fol. 849] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

NOTICE—Filed November 14, 1950

To:

The Honorable John Howard McGrath, Attorney General of the United States of America, Department of Justice, Washington, D. C.

Federal Communications Commission, Washington, D. C.

Honorable Otto Kerner, Jr., United States Attorney for the Northern District of Illinois, U.S. Court House, Chicago, Illinois.

Mr. Weymouth Kirkland and Kirkland, Fleming, Green, Martin & Ellis, Attorneys for Plaintiffs, 33 North LaSalle Street, Chicago, Illinois.

Shapiro and Schiff, Attorneys for Pilot Radio Corporation, 38 S. Dearborn Street, Chicago, Illinois.

Arvey, Hodes and Mantynband, Attorneys for Columbia Broadcasting System, Inc., 1 N. LaSalle Street, Chicago, Illinois.

Righeimer and Righeimer, Attorneys for Wells-Gardner & Co., 135 S. LaSalle Street, Chicago, Illinois.

Schradzke and Gould, Attorneys for Television Installation Service Association, 33 N. LaSalle Street, Chicago, Illinois.

[fol. 850] Please Take Notice that on Tuesday, the 14th day of November, 1950, at the hour of 10:00 o'clock in the fore-

noon, or as soon thereafter as counsel may be heard, we shall appear before the Honorable Philip L. Sullivan, United States District Judge, at his Courtroom in the United States Court House, 225 S. Clark Street, Chicago, Illinois, or before such other judge of said court as may be hearing matters in his place and stead and shall at said time and place present the motion of Local 1031, International Brotherhood of Electrical Workers, AFL, an unincorporated labor union, to intervene as a Plaintiff in the above-entitled cause, a copy of said motion, together with a copy of the proposed complaint of said union, being herewith served upon you, and shall move for the entry of an Order granting said motion to intervene and other relief, at which time and place you may appear if you so see fit.

Joseph M. Jacobs, Alfred Kamin.

Jacobs and Kamin, Attorneys for Applicant for Intervention, Local 1031, International Brotherhood of Electrical Workers, AFL.

Jacobs and Kamin, 201 N. Wells Street, Chicago 6. Illinois, Franklin 2-1646.

Jurat attached but not copied.

[fol. 851] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

MOTION TO INTERVENE AS A PLAINTIFF—FILED NOVEMBER 14, 1950

To the Judges of the District Court of the United States, for the Northern District of Illinois, Eastern Division:

Local 1031, International Brotherhood of Electrical Workers, AFL, an unincorporated labor union, hereinafter referred to as "Local 1031," by Joseph M. Jacobs and Alfred Kamin, its attorneys, moves to intervene as a plaintiff in the above-entitled cause on the following grounds:

1. This applicant for intervention, is an unincorporated labor organization which represents persons employed by

various manufacturers of radio and television receivers, parts and equipment therefor and allied products.

2. Local 1031 has in excess of 21,000 members, most of whom are directly employed in the manufacture of television receivers and parts and equipment for such sets.

3. Under the provisions of the National Labor Relations Act (29 U.S.C. Pars. 151, et seq.), Local 1031 has been designated by a majority of the employees in the plants wherein its members are employed as sole and exclusive bargaining representative in all matters relating to rates of pay, hours of work, seniority rights, job security and other conditions of employment. The names and locations of such employers and the number of their employees represented by Local 1031 are set forth in greater detail in its proposed complaint attached thereto.

[fol. 852] 4. As statutory bargaining representative, this applicant has negotiated with many employers engaged in the manufacture of television receivers, and parts and equipment used therefor, currently effective collective bargaining agreements.

5. In its capacity as statutory representative of these employees, the applicant is the principal spokesman in their behalf in all matters directly or indirectly affecting their job tenure, the employment opportunities and their actual earnings through available employment in occupations relating to the manufacture of television receivers, and parts and equipment therefor in the labor market area of Chicago, Illinois, and its environs.

6. The above-entitled cause was commenced in this Court on the 17th day of October, 1950, by the filing of a complaint seeking injunctive and declaratory relief, pursuant to various statutes of the United States, from the promulgation, operation and execution of an Order of the Federal Communications Commission theretofore entered.

7. Local 1031 has a direct and substantial interest in the issues of the above-entitled action and in the determination thereof.

8. Employees of various television receiver manufacturers and of manufacturers of parts and equipment for such receivers, represented by Local 1031 and members of Local 1031, seeking employment with such manufacturers, have already been adversely affected in their employment prospects by the Order of the Federal Communications Commission complained of and will suffer irremediable economic

loss, through substantial curtailment of earnings and employment opportunities unless said Order is enjoined and annulled, all as more fully set forth in applicant's proposed complaint, a copy of which is hereto attached.

9. The representation of the applicant's interests, in behalf of employees it serves as statutory collective bargaining representative, by the existing parties to this proceeding is or may be inadequate.

10. By various statutes of the United States and under the Rules of Civil Procedure for the District Courts of the [fol. 853] United States, there is conferred upon the applicant the right to intervene as a party plaintiff herein. See 47 U.S.C. 402 (a); 28 U.S.C. 2323; Rule 17 (b); Rule 24.

11. It will appear to the Court from the applicant's proposed complaint attached hereto that the applicant's claim and the main action have a common question of law and fact so that the intervention of the applicant will neither delay nor prejudice the adjudication of the issues arising in the main action.

Wherefore, the applicant prays for the entry of an order herein granting this application for leave to intervene as a party plaintiff, accepting as filed the proposed complaint hereto attached, granting leave to this applicant to adopt as its own, as an additional party thereto, the plaintiff's motion for a temporary injunction and other relief, heretofore filed on the 30th day of October, 1950, and fixing such other terms of intervention by this applicant as to the Court shall seem meet.

Local 1031, International Brotherhood of Electrical Workers, AFL, an unincorporated labor union.
By M. F. Darling, President and Business Manager.

Joseph M. Jacobs, Alfred Kamin. Jacobs and Kamin,
Attorneys for Applicant for Intervention. 201 No.
Wells St., Chicago 6, Illinois. Franklin 2-1646.

Duly sworn to by M. F. Darling. Jurat omitted in printing.

COMPLAINT OF INTERVENOR—Filed November 14, 1950

Local 1031, International Brotherhood of Electrical Workers, AFL, an unincorporated labor union, hereinafter referred to as "Local 1031", leave of court being first had and obtained, intervenes in the above-entitled cause and for its complaint herein alleges:

1. Local 1031 adopts all allegations in the Complaint in the above-entitled cause heretofore filed by Radio Corporation of America, National Broadcasting Company, Inc., and RCA Victor Distributing Corporation, plaintiffs, as its own, except those paragraphs thereof which relate peculiarly to the operations of said plaintiffs.

2. The paragraphs of said Complaint not adopted by Local 1031 are numbered as follows: 2, 3, 4, 7, 8, 9, 10, 11, 17, 20, 21, 78, 79, 80, and 81.

3. The Intervenor Plaintiff is a voluntary unincorporated labor organization. Its headquarters are in Chicago, Illinois.

4. Local 1031 has a good standing membership in excess of 21,000 persons. All of its members are employed in the manufacture of radio, television and electrical products, parts, equipment and sets, in and around the cities of Chicago and Bloomington, in the State of Illinois.

5. Under the terms of the National Labor Relations Act (29 U.S.C. 151 et seq.) and pursuant to representation elections conducted by the National Labor Relations Board thereunder, Local 1031 has been duly certified as statutory representative of the production and maintenance employees of many establishments engaged in the manufacture of television receivers or parts or supplies therefor.

6. Among the more sizeable establishments largely engaged in the manufacture of television sets, parts or equipment, in the Chicago or Bloomington labor market areas, whose hourly-paid production and maintenance employees are represented by Local 1031, are Admiral Corporation, which has 3 plants and approximately four thousand employees; Wells-Gardner & Co., employing about nine hundred persons; Jefferson Electric Company, employing thirteen hundred persons; Rauland Corporation, with eight hundred employees; Oak Manufacturing Company, employing about nine hundred men and women;

Standard Transformer Corporation, employing approximately six hundred, and American Phenolic Company, with eight hundred employees. These employment figures relate only to men and women engaged in the actual production of television receivers, or receiving tubes, coils, transformers, condensers, antennas, speakers, or other necessary parts of such receivers, and do not include employees of such companies not represented by Local 1031, such as executives, supervisors, guards, office and clerical employees, and other employees.

7. Not less than eighteen thousand men and women who are members of Local 1031 are employed by manufacturers of television receivers and makers of television parts and equipment.

8. The total average aggregate annual earnings for the past year of such members of Local 1031 as are employed by such manufacturers is in the neighborhood of fifty million dollars (\$50,000,000.00).

9. With the current trends toward negotiation between employers and labor organizations of yet higher wages than prevailed during the first ten months of the year 1950, if the relief herein sought is granted, the aggregate annual earnings of such employee-members will substantially exceed the sum of fifty million dollars (\$50,000,000.00) during the year of 1951.

10. Local 1031 is concerned not only with the establishment of equitable rates of pay for its members through collective bargaining with their employers, but is charged with primary responsibility for protecting the job security and work opportunities of such members.

11. Members of Local 1031 rely upon their Union to refer them to jobs in the radio and television industry in and around Chicago and Bloomington when they are laid off from regular employment.

12. The members of Local 1031 depend largely upon their Union to establish for them security in their jobs by the creation and enforcement of seniority rights in the collective labor agreements negotiated with their employers, and by the formulation of sound programs between their Union and their Employers to aid the industry as a whole to grow and prosper.

13. The men and women employed in the radio and television industry in the Chicago and other market areas are in high degree possessed of peculiar skills and knowledge

which are adapted to the special requirements of such industry and which are not necessarily utilizable in other trades or occupations.

14. The members of Local 1031 have entered the ranks of employment in the radio and television industry upon the fair assumptions that employment in such industry [fol. 856] will be relatively stable, that the future of such industry will be secure and that government agencies having control, direct or indirect, of such industry, would indulge in no arbitrary or capricious action which would violently disturb the properly anticipated security and future of their jobs.

15. Members of Local 1031 and the hourly-paid production and maintenance employees of other manufacturers of television receivers and parts for such receivers have a direct, substantial and immediate interest in the Order of the Federal Communications Commission complained of, which was brutally ignored by the Commission in the proceedings before it.

16. The Federal Communications Commission Order of October 10, 1950, does not embody a realistic, orderly and practical program to improve the standards of television broadcasting and reception. On the contrary, the Order is an ill-considered improvisation, certain to cause violent dislocations not only in the broadcasting industry, but in the manufacture and sale of TV receivers and equipment, with attendant disruption of the continuity of employment of the thousands of workers, including the members of Local 1031, now engaged in the manufacture of such equipment.

17. Members of Local 1031 did not have long to wait before they heard and felt the impact on the industry, to which their economic futures are inextricably bound, of the Commission's Order of October 10, 1950. On October 15, 1950, Frank Stanton, the President of the Columbia Broadcasting System, in an apparent flush of triumph over the CBS victory in the FCC proceedings used the facilities of CBS to advise potential buyers of television receivers to refrain from making purchases of receivers "until you will have a self-contained set with built-in compatibility and built-in color".

18. On October 22, 1950, Mr. Stanton publicly declared that the owners of millions of television receivers will have a "compatibility" problem in their efforts to convert

and adapt such receivers to the reception of Commission-sanctioned color broadcasts.

19. The FCC Order and Mr. Stanton's public exhortations to refrain from buying present model television receivers have already resulted in an abrupt leveling off of employment in the manufacturing of television receivers and parts and the cancellation of television receiver orders with manufacturers employing members of Local 1031. Prior to October 10 the industry was increasing its work force at a regular rate.

20. Violent overturn in the industry, and a complete loss of public confidence in the purchase of any television receivers at all has been averted only by the vigorous counter-offensive of the original plaintiffs in this action.

21. The officers and members of Local 1031 do not pretend to be engineering experts, and have no opinions or conjectures to offer concerning the technical problems involved in comparisons between the proposed color television broadcasting techniques of CBS, NBC, GTE or other parties who participated in the proceedings before the Commission.

22. However, as people who spend their days in the manufacturing of television parts and in the assembling of these parts into receivers, as men and women who themselves own and use television receivers, the members of Local 1031 know that inevitably there can be no "compatibility" between the CBS color system and the black and white television receivers now in the homes of America or being presently offered for sale or manufactured.

23. "Compatibility" may be a word of art to the engineers who testify at FCC hearings. Members of Local 1031 will accept the New Century Dictionary definition of "compatible" as "capable of existing together in harmony; consistent; congruous".

24. On the basis of this definition, the members of Local 1031 advise this Court that FCC claims of "compatibility" between existing receivers and the proposed method of color broadcasting contained in its Order are just chimerical assumptions. As workers in the industry and as set owners themselves, the members assert:

a. Small picture receivers (12 inches and under) are already regarded by the public as obsolete. The novelty of merely seeing a picture, any kind of picture, any size, in

your own home is no longer what sells TV sets. The public wants bigger and clearer pictures. Small sets are a drug on the market today. Merely adding color will not make the public satisfied with a small picture. Magnifiers proved to be a joke on the smaller sets. You had to have a head-on view through a magnifier or you saw a distorted picture. It seems weird that the FCC which is supposed to know so much about television should be seriously speaking about "magnified" pictures. Most of us now own 16 or 19-inch sets. However low the cost might be, we would see no point in going through the bother of converting and adapting our 16 to 19-inch sets to get a picture of 12 inches, even if the picture is in color. It is almost like CBS proclaiming wonderful high fidelity long-playing phonograph records which can be played only on an old fashioned victrola with its non-electrical, needle-contact horn!

b. The FCC figures for converting and adapting a 7-inch set for color have no application to the facts of life. Nobody is buying 7-inch sets now, and certainly nobody of common sense will spend \$95.00 to \$130.00 to convert and adapt a 7-incher today worth not over \$25.00, for color reception (even if it could be done as cheaply as FCC claims). Nor will anybody spend \$110.00 to \$170.00 to convert a 10 or 12-inch set for color. Indeed they wouldn't spend that much money now on an original new set in that size.

c. But even if the public would accept a smaller picture in [fol. 858] color and felt that the advantage of color reception would justify the outlay of converting and adapting costs, whether at the figures set by FCC or the higher figures estimated by other manufacturers, are the mechanics of adaptation and conversion proposed by CBS "capable of existing together in harmony" with present model black and white television receivers, whether in American homes, show-rooms, factory warehouses or on the assembly line? FCC itself admits "existing receivers with doors or recessed tubes would, in practice, be difficult to convert". What is a householder supposed to do with the doors on his television set? Chop them off? But even if he has no problem of doors or recessed tubes, and his other objections are overcome, he must install in his household a Rube-goldbergian device of such character and size that no industrial designer, however talented, could make "compatible" with the mood and furnishings of the ordinary family hab-

itat. (All of the above references are to FCC conjectures which may be found in Exhibit B, annexed to the original complaint, pages B 68-69, and B 71-72.)

The members of Local 1031, with their long experience in the radio and television industry, have seen their employers get stuck with many adapters of various types before. They feel that the same future would be found in public reaction to attempted conversion of existing receivers solely for purposes of receiving CBS color system broadcasts.

25. The inevitable consequence of the FCC Order herein complained of will be to discourage mass buying of television receivers in the character and form in which they are now being manufactured, until such time as the confusion engendered by the Order of October 10, 1950 has been dissipated. It will mean widespread conversion and retooling and marketing problems of great variety for their employers. Indeed there would likely be two such periods of conversion and retooling, the first to make effective the FCC Order and the second after the FCC renders a new Order to rectify the patent errors of its first sanctioned experiment in color broadcasting. The agency Order complained of herein will inevitably induce large-scale unemployment and diminution of earnings to the members of Local 1031, and other hourly-paid wage earners similarly situated throughout the nation.

26. Local 1031 and its members are, of course, not opposed to orderly progress and technological advancement in the industry in which they are employed; but they respectfully submit that the Order of October 10 of the FCC is not a forward step in the interests of the television industry or in the interests of the public.

27. Broadcasting companies; television receiver manufacturers and companies engaged in the production of parts and equipment used in the industry always have the opportunity, or at least the hope, of securing profitable adjustments at some future time for any business losses which they might sustain because of the ineptitude or callousness [fol. 859] of governmental agency action such as the FCC now proposes. But the wage earners represented by Local 1031 will have no such recoupment opportunities. Their sole income is derived from their hourly earnings as employees in an industry in which they have sought and in which they merit reasonable stability, job security, and

income prospects. The loss of employment to the members of Local 1031 and their loss of earnings through layoffs and reduced hours of work, which would result directly from condonation of the FCC proceedings herein complained of, will be irreparable.

28. For the reasons set forth in paragraph 75 of the complaint of Radio Corporation of America, National Broadcasting Co., Inc. and RCA Victor Distributing Corporation, plaintiffs, heretofore filed in the above-entitled cause, the Commission's Order is illegal, void, and beyond its power, authority and jurisdiction.

29. Additionally, this intervenor plaintiff submits that this cause should be taken by the Court as an appropriate review of final agency action under the Administrative Procedure Act, (5 USC 1001, et seq.). Accordingly this Court should hold unlawful and set aside the Order of the FCC of October 10, 1950, herein complained of and the findings and conclusions in support thereof, on the grounds that such Order, findings and conclusions are

(a) arbitrary and capricious, and an abuse of discretion, or otherwise not in accordance with the law;

(b) contrary to constitutional right, power, privilege or immunity;

(c) in excess of statutory jurisdiction, authority or limitation, or short of statutory right;

(d) without observance of procedure required by law;

(e) unsupported by substantial evidence, or

(f) unwarranted by the facts to the extent that the facts are subject to trial *de novo* by this Court.

30. This Intervenor Plaintiff in behalf of the employee members it represents has no adequate remedy at law.

This Intervenor Plaintiff prays for the following relief:

1. The specifically constituted court of 3 judges, convened to hear this matter, issue an interlocutory injunction herein, restraining and enjoining and suspending until further Order of this Court, the promulgation, operation and execution of the Order of October 10, 1950 of the Federal Communications Commission. And in aid of this prayer for relief, this Intervenor Plaintiff adopts as its own the motion herein filed by the original plaintiffs for such interlocutory injunction.

2. After final hearing this Court shall order, adjudge and decree that said Order of the FCC is beyond its legal authority, is in violation of the legal rights of this Intervenor Plaintiff and the members whom it represents, and is wholly void, arbitrary and unreasonable and that its promulgation, operation and execution be perpetually restrained and enjoined.

[fol. 860] 3. The Intervenor Plaintiff may have such other and further relief in the premises as to equity and justice may appertain, and as may be deemed by this Court to be just and meet.

Local 1031, International Brotherhood of Electrical Workers, AFL, an unincorporated Labor Union, Intervenor; By M. F. Darling, President and Business Manager.

Jacobs and Kamin, By Joseph M. Jacobs, Alfred Kamin, Members of the Firm, Attorneys for Intervenor, 201 N. Wells St., Room 1524, Chicago 6, Illinois. Franklin 2-1646.

[fols. 861-862] *Duly sworn to by M. F. Darling. Jurat omitted in printing.*

[fols. 863-866] [File endorsement omitted]

IN THE UNITED STATES DISTRICT COURT

[Title omitted]

Affidavits of Plaintiffs—Filed November 9, 1950

[fol. 867] IN THE UNITED STATES DISTRICT COURT

[Title omitted]

AFFIDAVIT OF C. B. JOLLIFFE

STATE OF NEW YORK,

County of New York, ss.:

C. B. JOLLIFFE, being duly sworn, deposes and says:

1. I am Executive Vice President in charge of the RCA Laboratories Division of the Radio Corporation of America (hereinafter called "RCA"); one of the plaintiffs herein.

2. I have read the Complaint, I am familiar with the facts there stated, and I hereby adopt the statements contained therein.

3. This affidavit is made in support of plaintiffs' motion for a temporary restraining order and a temporary or interlocutory injunction restraining, enjoining, and suspending [fol. 868] pending the promulgation, operation, and execution of the Order of the Federal Communications Commission (hereinafter sometimes called the "Commission"), adopted October 10, 1950, effective November 20, 1950, providing standards for the commercial broadcasting of color television. This affidavit is also made in opposition to motions to dismiss or for summary judgment filed by defendants and by intervenor Columbia Broadcasting System, Inc. (hereinafter called "CBS").

4. I am the holder of the degrees of Bachelor of Science and Master of Science from West Virginia University, and the degree of Doctor of Philosophy from Cornell University. I have been associated with RCA since 1935 and am a member of the Board of Directors of RCA, of National Broadcasting Company, Inc. (hereinafter called "NBC"), and RCA Communications, Inc. In addition to being Executive Vice President in Charge of the RCA Laboratories Division, I am also a member of the Committee on the RCA Victor Division, the management committee for the manufacturing division of RCA.

5. From 1922 to 1930 I was a research physicist of the Radio Section of the National Bureau of Standards of the Department of Commerce. The Department of Commerce had charge of the regulation of radio until the formation of the Federal Radio Commission in 1927. From 1930 to 1935 I was Chief Engineer of the Federal Radio Commission and its successor, the Federal Communications Commission. From 1922 to the present I have been familiar with the federal regulation of radio.

6. I have also served as Chief of the Electrical Communications Division of the National Defense Research Commission, as Secretary of the Industry Advisory Commission [fol. 869], Board of War Communications, and as Chairman of the Allocations Panel of the Radio Technical Planning Board. I am a fellow of the American Association for the Advancement of Science, the American Insti-

tute of Electrical Engineers, the Institute of Radio Engineers and the Radio Club of America.

7. The purpose of this affidavit is to set forth the basic facts and established principles which show that the Order is contrary to the public interest and to set forth the necessary effect of the Order upon the industry and upon research and development.

Outline of Affidavit

8. The Order here complained of adopts standards for commercial color television broadcasting which fit only the CBS system. Although the Commission is limited in its actions by the statutory standard of the public interest, convenience and necessity, the 9,000,000 existing sets cannot receive anything from broadcasts on these new color standards.

9. Thus the Order on its effective date, November 20, 1950, will deprive the owners of these 9,000,000 receivers and the 35,000,000 people who enjoy television service of any picture whatsoever—whether in black and white or in color—from such transmissions on the CBS color standards adopted by the Commission as broadcasters may make.

10. The adoption of a television system such as the CBS system which cannot be received by existing receivers without substantial alteration—an incompatible system—is arbitrary and capricious. The Commission's Order is also [fol. 870] arbitrary and capricious in standardizing for the indefinite future upon an inferior color system with a severely limited improvement potential.

11. The Commission's Order is likewise arbitrary and capricious in its preclusive effect. It denies to the public commercial broadcasting in color on systems such as the RCA system. The RCA system can be received on existing receivers without any modification whatsoever as a high quality black and white picture. The RCA system is thus a fully compatible system.

12. For the Commission at this time to deny to the public commercial broadcasting of color television on such compatible system is arbitrary and capricious and beyond its jurisdiction. Such broadcasting cannot operate to the injury of the public and will afford the public an opportunity to decide for itself the relative merits of the competing color systems.

13. The two reports of the Commission on which the Order was issued are based expressly on engineering grounds. Of the seven-member Commission, only two have technical backgrounds. One of these two, formerly the Chief Engineer of the Commission, dissented from the final adoption of the Order.

14. The staff engineer who advised the Commission and took the most active role throughout the hearing on behalf of the Commission's technical staff and who is in charge of the Commission's laboratory which tested the various color systems had an interest of prestige and reputation in the adoption of the CBS system. This interest arose from the invention by him of an automatic switch usable with the CBS system but not with a compatible color system.

[fol. 871] 15. Although RCA objected, this engineer was allowed to continue in the proceedings and subsequently gave testimony favorable to the CBS system. Upon information and belief this staff engineer in the absence of the parties advised the Commission and participated in the formulation and preparation of the Order.

The Order

16. The Order (Exhibit H to the Complaint) amends the Commission's "Standards of Good Engineering Practice Concerning Television Broadcast Stations" so as to provide for the commercial broadcasting of color television in addition to the commercial broadcasting of black and white television which has been carried on for nearly ten years.

17. The new color television standards* are intended to permit the commercial broadcasting of the color television system proposed by the Columbia Broadcasting System, Inc. in the proceedings leading to the adoption of color standards and to preclude the commercial broadcasting of any other color television system.

18. Since the beginning of radio the effort has been to permit the highest possible quality of service in the spectrum space available.

* Standards are the engineering rules governing the characteristics of the radio signal transmitted by operation of radio apparatus.

19. The principles laid down by the Commission for television in 1940 were that:

a.) television transmission standards permit the highest quality of service known to the art;

[fol. 872] b.) such standards leave ample room for all foreseeable improvements in service;

c.) such transmission standards be adopted as will permit all receivers to obtain pictures from all transmissions;

d.) standards should not be adopted until the potentialities of basic research have been fairly explored;

e.) the continuity of service to the public should be assured; and

f.) the industry be in substantial agreement upon the standards to be adopted.

20. These principles were reaffirmed by the Commission in 1947 with respect to color television.

21. The Order departs from all the foregoing principles.

22. The Order adopts standards which will not permit all receivers to obtain pictures from all transmissions.

23. The Order adopts standards which permit of only a low-quantity service and which put a low ceiling on future developments.

24. The Order will disrupt the existing television service.

25. The Order will seriously retard research and development in the television industry.

26. The Commission has completely disregarded the interests and the rights of the more than 9,000,000 people who will own black and white television receivers at the time the Order becomes effective. These receivers serve [fol. 873] an audience of nearly 35,000,000 people and represent an investment of over two billion dollars. This investment has been made in a period of only about four years. Yet it approximates the investment of the public in all existing sound radio receivers, both AM and FM.

27. Nothing whatsoever can be received by any of these 9,000,000 black and white receivers from broadcasts of the CBS color system.

28. These 9,000,000 owners of black and white television receivers were disregarded by the Commission although in the past it has expressly recognized that the receivers

sold to the public for a specified service should remain capable of receiving all transmissions of that service and has insisted that this be so.

29. In adopting this Order the Commission for the first time has departed from its uniform practice of seeking the best possible service known to the television art. Instead of adopting standards which would permit the highest available quality of service, the Commission has adopted standards which provide for an inferior service and which put a low ceiling upon the quality of the service that can be developed within those standards.

30. For the first time in its history, the Commission has established standards over the protest of the scientists, engineers and technicians of almost the entire radio and television industry. The Commission completely disregarded the knowledge and experience of the scientists, engineers and technicians of this industry although they were fully available to the Commission. This in spite of the fact that it is the industry which must live and develop under the standards set by the Commission.

[fol. 874] 31. The problem of the regulation of the technical aspects of radio and television is and always has been the obtaining of as high quality a service as is feasible within the spectrum space which can be allocated to any particular service. As an illustration, the spectrum space occupied by an AM broadcasting station is 10,000 cycles (10 kilocycles); the spectrum space assigned to an FM broadcasting station is 200,000 cycles (200 kilocycles); while the spectrum space allocated to a television broadcasting station is 6,000,000 cycles (6 megacycles).

32. The large amount of spectrum space required by a television broadcast station as compared with a sound broadcast station, either AM or FM, is occasioned by the fact that a great deal more information must be sent out over the air in order to create sight and sound on a receiver than is necessary to create sound alone.

33. These three broadcast services, AM and FM sound broadcasting and television broadcasting, are only three of a great many more services which require the use of the radio spectrum. These services include the military, police, international communications, ship communications, aviation, and others, each of which requires varying amounts of the ~~available~~ frequencies.

34. The problems attendant upon the creation of a commercial television service were intensified not only by the amount of spectrum space required, but also by the technical problems that had to be met if all receivers were to receive all transmissions.

[fol. 875] From the beginning of the consideration of television as a broadcast service the chief problems have been how much usable spectrum space was available and what technical transmission characteristics were necessary to provide a high-quality public service.

The Development of Television

Black and White Television

36. Experiments with television began in the 1920's. The first devices were crude and involved the use of a spinning mechanical scanning disc. Motion was jerky and the quality of the picture extremely poor.

37. However, in the middle of the 1920's mechanical scanning showed greater promise for immediate commercial operation than electronic methods. The Bell Telephone Laboratories and General Electric Company were working with mechanical scanning methods.

38. In spite of the work of these companies the inadequacies of the mechanical system were not overcome and research work was directed toward development of all-electronic methods of television.

39. As early as 1936 the industry recommended to the Commission that the television broadcast service operate in channels of 6 megacycles each, and television was allocated 6-megacycle channels for experimental purposes.

40. In 1936 RCA commenced the full-scale field testing of black and white television in New York City, broadcast-[fol. 876] ing a picture consisting of 343 lines and 60 fields.* The purpose of these broadcasts was to test what

* Broadcasting is express *not* a common carrier service. Communications Act of 1934, as amended, Sec. 153(h).

* A television picture is formed by tracing an electron beam across the face of a picture tube in a number of lines. The number of lines in the picture is one of the basic determinants of the quality of the picture. A television picture consists of two fields, each field being half of the total scanning lines.

technical characteristics were necessary in order to provide a high-quality service. The number of lines was very shortly raised to 441 with the field rate remaining the same. In addition, other members of the industry were also testing various combinations of lines and fields and other technical characteristics of a television broadcast service.

41. The Commission was kept informed of this testing and experimentation by the industry, and in 1939 part of the industry, including RCA, sought authorization for commercial black and white television.

42. The Commission refused to authorize commercial black and white television at that time, and, in its Report of May 28, 1940,** the Commission reviewed the principles which it regarded as basic to the regulation of television.

The Principles of Regulation

43. In its 1940 Report the Commission laid down the principles of television broadcast regulation from which it has not deviated until the promulgation of the Order:

“The Commission in addition to being charged with the duty of licensing radio transmission stations, has the obligation to promote experimentation in radio, encourage its wider use and ‘regulate the kind of ap-

[fol. 877] paratus to be used’ by sound and television stations. These powers are set forth in Section 303 of the Communications Act which provides:

‘The Commission, from time to time as public interest requires, shall

‘Study new uses for radio, *provide for experimental uses of frequencies*, and generally *encourage the larger and more effective use of radio* in the public interest; . . .

‘*Regulate the kind of apparatus* to be used with respect to its external effects and the purity and sharpness of the emissions from each station and from the apparatus therein; . . .

** In the Matter of Order No. 65 Setting Television Rules and Regulations for Further Hearing—FCC Docket No. 5806.

'Make such regulations not inconsistent with law as it may deem necessary to carry out the provisions of this Act.'*

Standards Must Assure Single Uniform System

"From the duty to regulate the kind of apparatus to be used by broadcasting stations stems the duty to fix the transmission standards of such stations. Transmission standards may be simply defined as engineering rules governing the characteristics of the radio signal transmitted by the operation of radio apparatus. Such standards as a practical matter must require a fair degree of efficiency and assure to the public in basic outline a single uniform system of broadcasting *which will enable every transmitting station to serve every receiver within its range.***

"In its regulation of television in the public interest, *the Commission*, in the light of the evidence before it, *has set as its goal unfettered technical development and engineering advance.* In dealing with the problem of setting television transmission standards the Commission has, therefore, sought to avoid action which would freeze the state of the art at an unsatisfactory level of performance.

"The art of television has been under development for more than a decade. During this time the Commission has issued a number of licenses for experimental purposes looking toward the development of the science to the point where the Commission could be reasonably assured of television's readiness for a competitive public service *upon a sound technical basis and upon a single uniform system.*

"On January 3, 1939, the Commission appointed a committee, consisting of Commissioners Craven, Brown and Case, known as the Television Committee,

* Emphasis supplied by the Commission.

** These, and succeeding italics, are supplied.

which was charged with the duty of investigating and submitting recommendations with regard to the fixing of television broadcasting standards by the Commission and the disposition of a number of pending applications for television experimental licenses.

"* * * The results of the Committee's studies were embodied in a public report dated May 22, 1939, in which particular emphasis was laid upon the vital questions of public interest which were inherently connected with the Commission's duty to prescribe uniform transmission standards in the television broadcasting field. * * *

'However, a serious question of public interest would arise in the future if the Commission should [fol. 879] specify external transmitter performance capabilities differing from the operating capabilities of receivers in the hands of the public. This is because of the resultant possibility that the public's receivers would be incapable of receiving programs emanating from transmitters licensed by the Commission.'

Standards Must Be Based on High State of the Art

"The Committee's studies disclosed that technical advancement of the art had not progressed to the point where it would be in the public interest to adopt any transmission standards for television broadcasting. *In the light of the demonstrated fluidity of the art and its current movement toward a higher level of efficiency, it was recognized that the acceptance of any fixed set of standards would entail the undesirable consequences of checking or retarding meritorious research.* It was, therefore, the Committee's recommendation that pending further studies upon the progress of television experimentation and research, no standards be adopted by the Commission.

Basic Facts of Television

"In order to make clear the nature of the controversy within the industry a brief explanation of the basic television methods employed and of the terms used is necessary. A complete scene cannot be transmitted instantaneously by presently developed

television methods. Therefore, it is necessary to transmit the picture by small successive elements, in a manner comparable to the eye reading the printed page of a book. This procedure of breaking the scene down is begun at the television camera by a process known as scanning. The picture at the receiver is made up of a single dot, caused by a stream of electric [fol. 880] currents, moving very quickly and continuously across the screen to form lines. The entire process is so rapid that the resultant mosaic is perceived as a complete picture because the eye retains or carries over the original impression caused by each position of the dot.

"Increasing the number of elements and scanning lines in the television picture increases the detail and distinctness. The detail capability of the television system is therefore in part dependent upon the number of lines transmitted.

"The 'memory' of the human eye is, however, limited and therefore it is necessary to scan each scene completely in a fractional part of a second and in rapid repetition in order that the eye may perceive the series of individual pictures as a single continuous flickerless picture with continuous motion. The rate at which the complete scanning of a scene is accomplished is called the 'frame frequency', and means merely the number of times the complete scene is scanned per second. If the frame frequency is too low, the reproduced picture will have flicker and the motion will be jerky; if the number of lines is too small, the picture lacks clarity and detail. In general, it may be said that an increase in the number of lines can be made within a given band width of frequencies only by reducing the frame frequency.

All Possibilities for High Quality Must Be Explored

"Two of the important television problems outstanding are to develop (a) a better picture with more detail and greater clarity and (b) a larger picture. If the screen is enlarged with a given frame and line frequency, the quality of detail and clarity diminishes. An increase in the number of scanning lines is the [fol. 881] only known method of satisfactorily accom-

lishing either of the desired ends. This could be most easily accomplished by increasing the band width of frequencies employed by each station. Each of such stations, however, already requires a large segment of the radio spectrum, a band of 6000 kilocycles which is 600 times the width of that necessary for a standard broadcast station. *The number of radio frequencies being severely limited, it is regarded as essential to explore all possibilities of improving performance within the present 6000 kilocycle band assigned.* Since within any given channel an increase in the number of lines entails a lower frame frequency—fewer pictures per second—the problem of flicker and jerky motion is raised.

Standards Must Not Be Prematurely Frozen

“The keynote of the Commission’s report and the policy underlying the Commission’s rules was that television broadcasting was still in an experimental stage and that in view of evidence revealing a substantial possibility of significant improvements in the art, ‘research should not halt’ and ‘scientific methods should not be frozen in the present state of the art.’ The Commission expressed the belief that the crystallization of standards at the current level of the art, by whatever means accomplished, would inevitably stifle research in basic phases of the art in which improvement appeared promising.

Statute requires “Larger and More Effective Use” of Frequencies

“Indeed, action in the light of these facts was compelled by the Congressional mandate under which the Commission serves. It would be a violation of its statutory obligations for the Commission to disregard any facts which might foreclose a proper exercise of its duty to fix transmission standards for a single uniform system of television broadcasting. Moreover, the Commission cannot ignore its duty to ‘encourage the larger and more effective use

of radio' and close its eyes to activities impending technical progress in the television art.

Public Interest in Continuous Service Must Be Protected

“* * * In general, it may be said that television transmission will reach satisfactorily only sets designed to receive the number of lines and frames and the type of synchronizing pulse transmitted. * * * Thus widespread public distribution of sets of a system operating on present levels will undermine incentive for further advance in television broadcasting and the Commission will be confronted with the accomplished fact of frozen transmission standards.

“It is this consideration that distinguishes the development of television from that of sound radio. At the time of the initial widespread distribution of sound radio receiving sets to the public, these sets were capable of receiving all types of radio transmission then being considered. General public use and improvement in radio transmission and reception could, therefore, go forward together without any substantial risk that the distribution of receiving sets would result in freezing transmission standards to the then levels. However, since television receiving equipment adequate to receive transmission on one system would often be incapable or inadequate to receive transmission by another system, the widespread distribution of such receiving equipment would tend to cause the particular system of transmission to which it is geared [fol. 883] to become a firmly rooted and immobile standard.

Technical Research Will Be Discouraged by Low Standards

“Contrary to the experience of other industries which have found that technical improvements were stimulated by large public use, in the television field a major portion of the industry takes the view that

successful promotional activities at this time can act only as an anchor on experimental efforts to go forward. *Premature crystallization of standards will, as has thus been pointedly illustrated to the Commission, remove the incentive for technical research toward higher levels of efficiency.* If technical research having this goal is retarded or halted, the Commission's duty to fix transmission standards with due regard for considerations of public interest will have been, for all practical purposes, nullified.

Industry Must Be Satisfied State of Art Permits Single

High-Quality System

"It is, therefore, the conclusion of the Commission that in order to assure to the public a television system which is the product of comparative research on known possibilities, standards of transmission should not now be set. It has further been decided that there should be no commercial broadcasting with its deterring effects upon experimentation until such time as the probabilities of basic research have been fairly explored.

**** As soon as the engineering opinion of the industry is prepared to approve any one of the competing systems of broadcasting as the standard system the Commission will consider the authorization of full commercialization. ****

"It may be expected that industry opinion will insist upon such standards as will give definite assurance of satisfactory performance and of continu- [fol. 884] ity of service for the public comparable to the continuity of service displayed in the past history of the radio industry. At the same time these basic standards—the standard gauge they may be termed—should afford within their limits reasonable flexibility for future advances in the science of television broadcasting. With the view to encouraging research and experimentation on a wholly flexible basis, the Commission is prepared to authorize broader, experimental operations by existing stations and by a number of additional stations."

While this review was occasioned in part by RCA's efforts to develop a television service with 441 lines, 60 fields, the principles enunciated in this Report have formed the basis of the regulation of television.

Adoption of Black and White Standards

44. On May 3, 1941, the Commission finally adopted commercial black and white television standards having 525 lines instead of 441, stating that 525 lines and 60 fields "giving substantially equal resolution and more fully exploit the possibilities of the frequency bands allocated for television," and noted that these standards "represent, with but few exceptions, the undivided engineering opinion of the industry."

45. It is also important to note that at the time these standards were recommended and adopted existing television transmitting and receiving apparatus had not yet been developed to the point where the performance capabilities of these standards could be fully utilized. In fact these standards leave room today for further improvement in black and white television. The significance of these standards is that they were set in order to provide the highest possible ultimate performance within a 6-megacycle channel.

Early Color Television

46. During 1940 and 1941 RCA, CBS and others were also working on color television. At that time the conception was that to obtain a color picture of equal quality with a black and white picture, approximately three times the bandwidth required by the picture, or video, part of the black and white service would be needed.

47. When the Commission instituted extensive hearings in 1944 to review the allocation of frequencies to the various services in the light of new technical developments, including those made in military researches, the question of color television was again brought forth. At this time the industry, including CBS, was agreed that color television should have at least the same picture quality as the black and white service. In the then state of the art, this meant that color television would require anywhere from 12 to 20 megacycles.

48. As a result of these hearings, the Commission reaffirmed the black and white standards which it had adopted in 1941.

49. On the basis of these standards which had twice been affirmed by the Commission, the commercial television broadcasting and manufacturing industry got its real start in 1946.

[fol. 886] *The Rejection of the Field Sequential Color System*

50. In the fall of 1946 the Commission instituted hearings on a CBS petition for the adoption of a wideband, high-definition, field sequential color television system.

51. During the course of the 1946-47 color hearings RCA introduced evidence with respect to the then state of development of its simultaneous color television system which utilized a 14-megacycle channel and which gave the same picture quality as existing black and white service.

The 1947 Reaffirmation of 1940 Principles of Regulation

52. In rejecting the CBS system, the Commission stated in its Report of March 18, 1947,* as follows:

"In brief, the color television system proposed by Columbia provides for channels 16 megacycles wide, with color being transmitted sequentially. Under the proposed sequential system each picture is scanned through separate color filters—red, green and blue, in turn. These transmissions in the separate colors follow each other at the rate of 48 times per second. These three color transmissions are accepted by the receiver by means of a color wheel containing filters of red, green and blue, which rotates in front of the television screen in synchronism with a similar color wheel at the transmitter. When the images of the three [fol. 887] colors are so received, the eye, is enabled to see the picture in full color.

"It should be pointed out that the only color television system as to which Commission approval is

* In the matter of Petition of Columbia Broadcasting System, Inc. for Changes in Rules and Standards of Good Engineering Practice Concerning Television Broadcast Stations—FCC Docket No. 7896.

requested in this proceeding is that proposed by Columbia. During the hearing Radio Corporation of America demonstrated another color television system. This is the so-called simultaneous system where each picture is scanned simultaneously in three colors—red, green and blue—and these transmissions are sent simultaneously on three different channels and are combined at the receiver to produce a color image. *Radio Corporation of America did not advance this system as one which should be approved at this time. R. C. A. stated that its system was still in the laboratory stage but presented it to the Commission as representing a system which could be developed for commercial use in four or five years and which, according to R.C.A., has many advantages over the sequential system.*

“It is obvious that before permitting a new television service to become established on a regular basis, a decision must first be made on fundamental standards. Otherwise, manufacturers of receivers could not start to build receivers, and the public could not purchase receivers with any confidence that they would be able to receive programs from all television stations, or that their receivers would not become useless immediately after they were purchased if the existing stations should change any of the fundamental [fol. 888] standards. Under these conditions, it is entirely unlikely that television receivers would be bought on any mass basis. The justification for allocating so much of the radio spectrum to television broadcasting—78 megacycles for Channels 1-13 and 440 megacycles for experimental television—is that television is an important medium for bringing news, education, culture and entertainment to large segments of the population. With the great demand for frequencies on the part of the other radio services which cannot be met in full, the Commission would not feel justified in allocating so many frequencies to television at the expense of the other radio services, if it were inevitably destined to be limited to small audiences.

Necessity for a High Set of Standards

"Before approving proposed standards, the Commission must be satisfied not only that the system proposed will work, but also that the system is as good as can be expected within any reasonable time in the foreseeable future. In addition, the system should be capable of permitting incorporation of better performance characteristics without requiring a change in fundamental standards. Otherwise, the danger exists that the standards will be set before fundamental developments have been made, with the result that the public would be saddled with an inferior service, if the new changes were not adopted, or if they were adopted, receivers already in the hands of the public would be rendered useless.

"Judged by the foregoing test, the Commission is of the view that the standards for color television proposed by Columbia Broadcasting System should not be adopted. In the Commission's opinion the evidence [fol. 889] does not show that they represent the optimum performance which may be expected of a color television system within a reasonable time."

53. Thus the Commission reaffirmed the basic principles of television broadcast regulation as set forth in its Report of May 28, 1940. It is these basic principles which have now been repudiated by the Commission's Order adopting commercial standards for color television.

The Development of the RCA Color Television System

54. Among the reasons for the development of the wide channel color television systems referred to in the Commission's Report of March 18, 1947, were

- a) the fact that the then state of the art meant that a color picture comparable in quality with the black and white picture required more bandwidth, and
- b) the expectation that the additional bandwidth could be found and used.

In addition, no television service was as yet a true commercial reality.

55. By the fall of 1948 the belief that color television should find its place in wider channels had to be modified. This was true primarily because of the tremendous public acceptance of the new black and white service and the eventual desirability of more television stations and television channels than could be afforded if the channel width were to be two to three times as wide as 6 megacycles.

[fol. 890] 56. Consequently RCA devoted its attention to enabling its simultaneous color television system to operate in the 6-megacycle, rather than a 14-megacycle channel. The 14-megacycle simultaneous system, unlike the field sequential system, had already been so designed that one of the three color pictures could be received on a black and white set as a black and white picture. The problem was to find a way to transmit the full 14-megacycle picture in a 6-megacycle channel, and to do so without loss of picture quality.

57. This problem was solved by RCA in a dramatic way by the new and unique combination of the principles of the simultaneous system with other electronic techniques. *For the first time it was possible to transmit and receive a picture having 525 lines, 60 fields with picture quality equivalent to that of the black and white service, and with color too, in a 6-megacycle channel.*

58. Furthermore, the color picture could be received on a black and white receiver as a full-quality, high-definition picture without so much as touching the receiver.

59. The development of a color service to run on the same standard gauge track as black and white, with no sacrifice in picture quality, had at last become a reality.

¶ 60. This meant that all television receivers, past, present, or future, could receive all television transmissions whether broadcast in black and white or color. The broadcaster need lose not one of his carefully built-up audience. The set owner need lose none of the service for which he bought his set. The RCA color system is thus completely compatible with the present black and white system.

[fol. 891] 61. This system was not built in a day. Nor is its apparatus completely perfected. But neither was the apparatus for the black and white system perfected at the time of its adoption in 1941. To take an example, the image orthicon camera tube developed by RCA and upon

which all modern television now depends had not even been developed in 1941 and was not introduced commercially until late in 1946.

The Recent Color Hearings

62. The Commission's Report of March 18, 1947 contemplated that four or five years were needed for the commercial development of the RCA color system.

63. The Commission still regarded the period for development as requiring four or five years in January 1948. Commissioner Hyde, speaking for the Commission before the House Committee on Appropriations, stated with respect to standardization on a color system:

"But the Commission felt, after hearing all of the evidence, that there was room for a good deal more improvement, and that if we crystallized the thing now by establishing standards which would control, that the public would not have as good service as will be possible in the reasonably early—near future. It was indicated it would be 4 or 5 years before it would be possible to do much about it."

64. Present at the hearing when Commissioner Hyde made his statement were a majority of the then Commission, including Chairman Coy, Commissioners Durr, Sterling and, of course, Hyde.

[fol. 892] 65. Of these four or five years referred to in January 1948 little more than two had passed when the Commission, on July 11, 1949, issued its "Notice of Further Proposed Rule Making (FCC 49-948)" (Exhibit A to the verified Complaint herein). In this Notice the Commission proposed, among other things, to consider color television systems again, provided that such color systems met two criteria:

- a) that they operate in a 6-megacycle channel, and
- b) that the pictures could be received on existing television receivers "simply by making relatively minor modifications in such existing receivers."

66. Pursuant to this Notice and the various amendments thereto, a hearing was held before the Commission *en banc*.

During the course of this hearing evidence was presented to the Commission with respect to three proposed color television systems all of which can operate in a 6-megacycle channel. One of these three systems was the all-electronic, high-definition, compatible color television system developed by RCA from its simultaneous system.

67. CBS presented evidence with respect to its field sequential color television system which had been squeezed into 6 megacycles only at severe sacrifice of quality. Not only did this 6-megacycle system recede from the quality of the 16-megacycle system rejected by the Commission in 1947, but the amount of picture detail was even smaller than the 6-megacycle system advocated by CBS in 1940. Apart from this, the 1950 CBS system was conceded by its sponsor to be fundamentally the same as the CBS 1940 system.

{fol. 893} 68. In addition, the uncontradicted evidence showed that not one of the 9,000,000 black and white receivers can receive a television picture from broadcasts on the CBS color system. Not until important and expensive changes have been made in the electronic scanning components of present black and white receivers can these receivers reproduce even a black and white picture from the CBS color transmissions. Thus the CBS system is not compatible with the black and white system.

69. The evidence further showed that to adapt existing receivers by making the necessary changes in the electronic scanning components of these 9,000,000 receivers in the hands of the public would involve a total cost to these receiver owners of hundreds of millions of dollars. The expenditure of this sum in thus adapting present receivers would not result in a color picture but only in a black and white picture and *this picture has considerably less than half the detail of a present black and white picture.*

70. The black and white television standards are such that the picture which appears on the face of the television receiver is comprised of approximately 200,000 picture elements. On the other hand, the uncontradicted fact is that the CBS color standards adopted by the Commission are such that the picture which appears on the face of the television receiver is comprised of only about 80,000 picture

elements. This is a serious decrease in picture detail and picture quality.

71. Color Television Incorporated also presented evidence with respect to an all-electronic and theoretically compatible (i.e., receivable by existing sets as is the RCA system) color television system.

[fol. 894] ¶ The Commission's First Report

72. On September 1, 1950, the Commission issued its First Report (Exhibit B to the verified Complaint herein) pursuant to which it did not adopt any color television system proposed at the hearings. Recognizing many of the CBS system defects, the Commission proposed that further time be allowed for the development of all color systems.

73. The time for further development was, however, dispensed only for three months and only upon conditions. Only if black and white receivers manufactured from and after early November 1950, were redesigned in order, among other things, to receive CBS color transmissions as a degraded black and white picture, would the Commission refrain from adopting the CBS system.

74. Nor was this the only condition. In addition, the Commission issued its Second Notice of Proposed Rule Making (Exhibit C to the Complaint), proposing a drastic change in existing black and white television standards.

75. Not one word appeared in the record of the Commission proceedings as to any change in the existing black and white television standards. Nor was there any mention of such a change in the Commission's notice instituting those proceedings. Nevertheless, the Commission's Report made it clear that unless the industry would consent to this change in the black and white standards *without a hearing* the CBS color system would be adopted forthwith.

76. The complete impracticality of the proposed change in the black and white standards, as well as the fallacy of seeking to adopt the CBS system on *any* conditions, is [fol. 895] set forth in the RCA Comments with respect to the First Report (Exhibit D to the Complaint) which I signed.

77. The industry pointed out

a) the impracticality of redesigning their production of receivers to meet the manufacturing specifica-

tions on the time schedule proposed by the Commission, and

- b) the fact that the Commission had no jurisdiction over set manufacture, direct or indirect, by threat or otherwise.

The Commission's Second Report and Order

78. On October 10, 1950, the Commission adopted its Second Report (Exhibit G to the Complaint,) reaffirming its First Report, and carrying out its threat to adopt the CBS system without waiting for the color developments referred to in the First Report. The Order adopting the CBS system is annexed to the Complaint as Exhibit H.

79. The Order set standards for color television which were contrary to the practically unanimous views of the television industry and its scientists and engineers, as well as those of independent experts.

80. The Commission gave as its justification for departing from the principle that all receivers should be able to get pictures from all transmissions—a principle first enunciated by the Commission in 1940 and thereafter reaffirmed by it—that it was “of the opinion based upon a study of the history of color development over the past ten years [fol. 896] that from a technical point of view compatibility” was too high a price to put on color.

81. The excuse for the adoption of the scientifically inferior and incompatible CBS color system at this time was the Commission's expressed fear that if more than the nine million receivers outstanding as of the effective date of the Order were manufactured, the Commission would not be able to adopt a color system which could not be received by such receivers.

82. It was this fear which led the Commission to freeze color standards at the low level of the CBS system in spite of its recognition that the fruits of fundamental research in color stimulated by the hearings might only now be emerging from the laboratory.

83. Any “study” of the “history of color development over the past ten years” from a “technical point of view”, or any other point of view would establish that

- a) many of the past ten years were war years,

- b) even black and white television did not really start until four years ago, and
- c) the present recognition that color television should occupy only 6 megacycles did not come until 1948.

84. The Commission expressly stated that it was disregarding the views of industry experts, and the whole profession of radio engineering is indicted in the concurring opinion of Commissioner Jones. This in a castigation so stinging as to include the implication that these [fol. 897] engineers have prostituted their professional opinions to the economic desires of their respective companies.

85. This again from a man with no engineering training himself and of an industry which has a record in its very short life of more dynamic and rapid advance than of any ever known, and of an engineering group which has accomplished literally miracles.

86. As Donald G. Fink, a distinguished independent electronics engineer and an outstanding editor in that field, wrote of Commissioner Jones' opinion:

"The burden of this opus is that the industry committees, which have testified before the FCC on television matters, have systematically obstructed the introduction of color television by 'sham engineering testimony.'

"According to Jones, none of the members of these [engineering] groups, excepting the two CBS members, have presented consistent, reliable and trustworthy testimony during the past ten years.

"We wonder whether the worthy Commissioner knows the men he so recklessly and immoderately attacks. The combined membership of these committees comprises 121 men, 45 of whom are fellows of the IRE, 25 directors, past and present, of the IRE, the present president of the IRE and eight past presidents, six men who hold the IRE Medal of Honor and four others who have won the IRE Morris Liebmann Memorial Prize.

"An indictment of these men is an indictment of the whole profession of radio engineering. They have [fol. 898] built the radio service of the United States

from its earliest days, they have managed the technical effort in electronics during two wars. Without their cooperation, the FCC simply cannot function in regulating its highly technical domain.

"When one man aligns himself against a whole profession, fair-minded men will conclude that the man is wrong. The only 'systematic' aspect of the record presented by Jones is his own systematic rejection of any testimony that disagrees with his own notions. Moreover, the testimony is rejected not merely as wrong, but as intentionally dishonest. This is demagoguery. Any claim that *all* contrary testimony on a given subject has as its object the exploitation of the public is rubbish. While Jones' views stand, he disqualifies himself as a judicial servant of the people."

87. The action of the Commission in precipitately adopting standards for the inferior CBS system departs from previous regulatory principles for the following reasons, among others:

a) The Commission has for the first time put to one side the all-important question of the ability of all television receivers to receive all transmissions, namely, compatibility. This the Commission has done although the progress of research and development had at last made a truly compatible color system a reality.

b) The Commission has for the first time departed from its previous insistence that standards be based upon the highest known state of the art and permit the fullest utilization of foreseeable developments in order that the fullest [fol. 899] utilization of the radio frequency spectrum might be assured.

c) The Commission has for the first time disregarded the recommendations of the scientists, engineers and technicians of the radio and television industry.

d) The Commission has for the first time disregarded the basic tenet that only a sound decision and not a hasty one can be in the public interest. Contrary to the requirement laid down in its 1940 Report and reaffirmed in its 1947 Report that the Commission must take account of any facts which might bear upon the attainment of high-quality

standards, the Commission has prematurely set inferior standards, thus frustrating the course of research and development in the television industry.

88. The Commission has also failed to take account not only of the facts before it but also of other facts (hereinafter mentioned) which it had a positive duty to take into account before formulating standards.

Compatibility Has Been Rejected

89. Compatibility makes it possible to add color broadcasting to the present black and white service without disrupting the entire structure of the present television service. Thus, with a compatible system the television service now enjoyed by approximately 35,000,000 viewers would neither be interrupted nor curtailed by the advent of color.

Adoption of a compatible system would mean that the more than 9,000,000 owners of black and white receivers, with an investment of over two billion dollars, would not be confronted with a loss of usefulness of their receivers. [fol. 900] Nor would they be confronted with the necessity of spending hundreds of millions of dollars merely to get degraded black and white pictures and to avoid loss of the service which they now have.

Adoption of a compatible system would mean that television broadcasters would not, in switching to color broadcasts, lose their entire audience.

Adoption of a compatible system would mean that the advent of color would not disrupt the business of thousands of television dealers, distributors, service organizations, manufacturers and broadcasters.

Compatibility is of the first importance to color television itself. Only with a compatible system is it economically practical for the broadcaster to broadcast color programs at all, for the reason that only with a compatible system does the broadcaster retain his audience.

From the standpoint of the public interest, compatibility is of first importance in obtaining color service.

90. It is not possible under the Commission's Order for any television station owner to broadcast programs on black and white standards and color standards at the same

time. Under the Commission's Order this would require each broadcaster to have two television channels, which is impossible in view of the shortage of available frequencies. On the other hand, with a compatible color television system, a broadcaster transmitting a program on color standards is automatically broadcasting a signal which can be received at the same time on an existing black and white set, without any change in that set whatever.

[fol. 901] 91. By failing to insist upon compatibility, the Commission has abandoned the salient regulatory principle which it laid down in 1940. This principle is that the television transmission standards must assure to the public a "... system of broadcasting which will enable every transmitter to serve every receiver within its range."

The Commission Did Not Have Unbiased Technical Staff Advice

92. Only two of the seven members of the Commission have had technical training, and one of the two dissented from the adoption of the Order. The rest are laymen. Yet the First and Second Reports, upon which the Order is based, purport to contain highly technical judgments of the electronic art.

93. Paragraphs 70 through 74 and paragraph 75(g) of the Complaint relate to the professional, though not financial, interest of a Commission staff engineer in the CBS system. Those allegations have been incorporated in this affidavit.

94. From experience with the Commission, and with its predecessor, the Federal Radio Commission, I know that the Commission, composed primarily of laymen, is dependent for technical advice, which in turn is determinative of technical findings, upon industry engineers and its staff engineers.

95. In these proceedings only CBS engineers and the Commission staff engineer referred to in the Complaint, Edward C. Chapin, the co-inventor of an automatic adapter [fol. 902] switch usable only with the CBS system, testified in favor of the CBS system on technical grounds. The industry scientists and engineers, and independent experts, favored a higher quality and compatible system.